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Watch Your Head!
SCIENCE
What kills the passengers when an air-plane crashes? to the non-scientific lay-man, that question might seem on a par with "What causes death to the fly when a fly-swatter mashes it?" But the Cornell Aeronautical Laboratory was interested in the scientific, not the common-sensible answer. If there is no fire, the Cornell in-vestigators decided, the leading cause of death is cracked skulls. So the laboratory. backed by the Navy, set out to learn how a human skull cracks, and how to prevent it. Last week the experimenters described some of their findings.
Since they had to do without human skulls, the researchers, led by Edward R. Dye, started out with hens' eggs-which, Dye explained, are roughly equivalent, for experimental purposes. Both are about the same shape (ovoid), and both consist of a rigid, fragile shell containing gelatinous material. Eggs will break when dropped four inches on a hard surface, skulls about four feet. But skulls and eggs crack about the same way.
Dye and his associates made a gadget like a child's swing, put an egg in it, and swung it against a steel plate. When the egg was free to move (like a passenger with no safety belt) a very slight shock broke the shell. When held tightly, the egg survived harder shocks. When cushioned with rubber in front, it lasted even better. The hardiest eggs were snuggled against a cushioned block that slipped a little when the swing hit the steel, allowing the egg to come to a slow stop. It took a powerful shock to crack such a coddled egg.
Dye's group then developed a more

realistic skull substitute. They made life-sized, head-shaped shells of brittle plastic and filled them with gelatin. They finally got an artificial human skull that reacted to shock almost exactly like a real one. Then they catapulted the models against solid objects resembling airplane parts that passengers' heads might hit in a crash. Out of these skull-cracking labors came a theory to guide designers of aircraft. An airplane that is easiest on skulls, Cornell decided, should hold its passengers as tightly as possible. The things that skulls might strike against should not be small, hard objects, but should be made of thin metal formed around broad shapes of yielding plastic foam.

Seats should be made so that they slide a little when the plane crashes. Also, the plane's nose should be made of material that yields gradually. The Cornell men believe that if all these principles were followed, a pilot could fly a small plane into the ground at 150 m.p.h.-and walk away with a skull somewhat addled but still uncracked.

The Romantic Zoologist

Big-Game Hunter Willy Ley* has returned from safari. Having tracked his prey through the dank undergrowth of large public libraries, he has put his trophies on exhibition in a newly published book, The Lungfish, the Dodo and the Unicorn (Viking: $3.75).

Ley calls his book "an excursion into romantic zoology." It is a lighthearted excursion. A man of deep zoological faith, Ley believes that animal myths are based on actual fact, and that many fearful and wonderful creatures, undreamed of (and

German-born Willy Ley is better known as a writer on rockets and interplanetary travel. His present book is an expansion of an earlier work, The Lungfish and the Unicorn, which became a war casualty when published in 1941.

NEBUCHADNEZZAR'S SIRRUSH

Anybody seen a dinosaur?

The Bettmann Archive

TIME, OCTOBER 4, 1948

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unlisted by more unromantic zoologists, may st roam the earth.

Gentle Unicorn. The unicorn, King of (nonexistent) Beasts, was reputed to be a graceful strong animal that could not be taken by force. But like the "gentil knights of the troubadours' verses, it would lay its head in a virgin's lap. A pity, says Ley, to believe that the unicorn is only an ugly rhinoceros, dimly and distantly seen. Perhaps the noble beast had a pleasanter prototype. Modern scientists know, Ley points out, that the horn buds of a calf can be transplanted to the middle of its forehead, where they develop together into "unicorn" (single horn). The bull with such a horn becomes the leader of the herd. Confident of his strength and position, he can afford to be as gentle as a unicorn.

Evil Kraker. Another mythical beast, says Ley, has really come to life: the kraken a gigantic octopus that flourished in the imagination of medieval Scandinavians. Evidence has been accumulating, he says, to prove that there are several species of giant squid or octopus which come to the surface only rarely. Ley thinks that Scylla, of the Odyssey, must have been a raken, with her six toothy necks reaching out of a sea cave. So was Medusa, with her "snakes" (octopus arms) writhing around her face.

Ley believes in sea serpents too; he marshals an impressive panel of ministers, sea captains and other reliable witnesses to testify that they exist. They are not "serpents", he thinks, but some large reptile or mammal from an earlier age.

There are other strange beasts in the sea, says Ley, that zoologists do not recognize. For example, there is a turtle-like creature, much bigger than known sea turtles, called a niuhi in Easter Island and a moha-moha in Queensland. It may range all over. Last winter, says Ley, a large unknown animal tried to climb a sea wall in Florida, leaving great moha-moha-like tracks in the sand.

Modern Dinosaur? Are any dinosaurs

still around? Ley tells of the Ishtar Gate in the ruins of Nebuchadnezzar's Babylon, which is decorated with portraits of the Sirrush, a scaly, tall-walking reptile with clawed hind feet like a bird. The drawing is singularly detailed, and like nothing known to modern man until he dug up fossil dinosaurs. Ley thinks that the ancients may have seen something like a living dinosaur. Perhaps modern man may still see one. Ley cites many descriptions of a dinosaur like creature that may be roaming the Central African swamps. There may be anthropoid apes in Venezuela, Ley says optimistically, and little furry men in Africa. Ley admits that the dodo, most extinct of birds, is gone for good-and so is the great auk.
But more Giving fossils, he says, may turn up any day. Not ten years ago, South African fishermen caught a latimeria, a large primitive fish that was supposed to be extinct 60 million years ago. Who knows what fossils may yet come to life-what myths turn to fact? Meanwhile, zoology is richer for Willy Ley's researches.
TIME, OCTOBER 4, 1948

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MAGAZINE: ASTOUNDING SCIENCE FICTION
DATE: MARCH 1938, VOLUME XXI NUMBER 1
SECTION: SCIENCE FEATURE
ARTICLE: POWER PLANTS OF TOMORROW
AUTHOR: WILLY LEY
PAGES: 108-112.

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Number 1
March, 1938
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SOMETHING FROM JUPITER.

Don Elstar
They weren't remotely human-they were but of ammonia instead of water-but the human found they understood one feeling-gratitude.
THE MASTER SHALL NOT DIE!
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A thousand years he lived, while his friends died away about him. Thirty men
EYE OF THE PAST
had died for him-and the civilization he made possible. Bo-he dared not die!
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Two men lost in infinity-who forgot that there is more than one infinity-
DUEL IN THE SPACE LANES.
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A curious little man seeks the Storm-bringer. An unusually fine little fantasy.
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A story of mind-maddening confusion brought by time-travel.
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A solid steel beam vanishes-and comes back frmly holding a captive of another world.
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Introducing Kent Oasey, an interesting new author, Bergeant John West, a ruminative space-soldier, and Dr. Von Theil, o scientist with much sense, but no sense of dignity.
Serial Novel:
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A general is given the greatest military weapon of all time and no way to see it to defeat Ala overwhelming enemy!
Science Feature:
POWER PLANTS OF TOMORROW
The last of the short series on future power sources-Putting the Moon on the Jod.
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Power Plants of
Tomorrow

by
Willey Ley

The last of a short series of science articles on future
"Putting The Moon on The Job"-
power sources-

THE waters of the seas are alluring. They promise travel, adventure, danger and thrills. And they promise wealth, too. Once it was the wealth of pirate loot or of jetsam, amber and pearls. Now we are seeking a more precious wealth in the waters of the seas. It is neither pirate treasure nor the gold dissolved in the waves; it is power. The waves of the seas, the winds of the seas, the tides of the seas-almost anything that has to do with salt water abounds with power. There is power in the difference between the temperatures of surface water and of ground water in the tropical seas, and there is power in the difference between the temperatures of the water of the Arctic Ocean and of the ice floating upon its surface.

Every one of these possible sources of power has been investigated theoretically, and it has been found that every one of them is large enough to furnish all the power needed by civilization. The question is how to harness these powers, and how to harness them efficiently. Not all the various sources of power offered by the seas are equally useful, because not all of them are steady enough for the needs of industry. A hundred years ago it may have been a good excuse for not running the mill because there was no wind blowing for a week or so. In our time we cannot waste time waiting for favorable weather. Our sources of power have to be reliable and steady. Although wind is proverbially unreliable, there are still many engineers that busy themselves with the problem of harnessing wind power. The problem looks easy-it apparently only calls for a sensible application of the laws of acrodynamics to the old windmill. There is such a "modernized wind-

mill" running and generating electric power since 1931 near Balaklava, Crimea, USSR. It looks odd for some reason, somewhat resembling an airplane that crashed on top of an oil well and broke its wings. But this modern development of the old, picturesque windmills works well, does not have to have many repairs, and generated approximately 200,000 kilowatt hours per year since it was built. Therefore one can understand that the Russian experts are quite satisfied, and plan a much larger power plant of the same type. They are well acquainted from experience with the unreliability of the wind, however, and do not propose to use the power they expect to harness for any work that has to be done on schedule. It must be hard to find such work in Russia.

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Diagram of proposed Argentine tide-power plant. Note that the control gates are so arranged that, whether bay or sea has the higher level, the direction of flow of water past the turbine blades may be made the same.

Another interesting means of harnessing wind power has been developed in France in the aerodynamic laboratories of Saint Cyr. Oddly enough, it looks very similar to Dubos' solar - power plant. Its construction is of extreme simplicity. It consists of a metal chimney with a wide collar attached around its mouth. Wind coming from any direction will cause a suction effect, which makes a horizontally mounted wind turbine turn. The turbine is placed in the lower part of the chimney. The French claim that this device has an efficiency of 100% and that it represents "the perfect wind tower." In any event, it is the simplest wind power engine yet invented, and successfully avoids the disadvantage of being inefficient if it does not point exactly toward the direction of the wind.

Anything that can be said, and has been said, against wind power plants applies to the fullest extent to the wave engines that have been conceived by so many inventors. Wave power plants seem so very easy in principle-a number of floating pontoons anchored along a bridge construction equipped with levers that transfer the up-and-down movement of the pontoons, to a shaft, constitute the driving force. The shaft then turns a pumping mechanism which pumps water into a reservoir situated near by in an elevated position. The conversion into electric power is then accomplished by a normal water power plant.

THEORETICALLY, there are but few difficulties to make the power of the waves steady in this manner. Actually, such a power plant would suffer many losses, such as friction of the various levers and gears, and evaporation from the open reservoir, to name but a few. One may dismiss consideration of these obstacles in view of the magnitude of the power available. Still, it has to be

admitted that the power would not be reliable unless the power plant is built at a seashore, where there is heavy sea

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almost every day of the year, and where at the same time a large natural reservoir considerably higher than sea level is available. Doubless there are shores that fulfill all these conditions, but they are rare and the majority of them are situated in places where there will be little need for power within the next few centuries.

The reproach of unreliability does not apply to the projects that work with a difference of temperature, either between surface water and ground water of a wårm sea, or between surface ice and the water underneath a cold sea. The latter project is connected with the name of the physicist Doctor Barjot, the former has become known mainly through the experiments of Professor Georges Claude:

While Barjot's plans have not yet progressed beyond the stage of calculation and investigation, Claude was fortunate enough to be able to make quite extensive practical experiments on a rather large scale.

Claude's idea is to utilize the difference in temperature between surface water at about 30°C. and ground water at about 10°C. or lower to drive a low pressure steam engine or steam turbine. But it is not really his idea. It was suggested for the first time by Professor d'Arsonval in a paper published on September 17, 1881, in the Revue Scientifique.

At that time, not much attention was paid to the suggestion although d'Arsonval was a famous physicist. In November, 1926, Professor Claude and P. Boucherot jointly submitted a report to the French Academy of Sciences which dealt with experiments made with working models of a low pressure power

plant operating on a temperature difference of only 15°C. Some time later this model-or a similar one-was demonstrated to the members of the Academy, and in April, 1928, Claude and Boucherot put the finishing touches to a power plant near Ougrée-Marihaye (Belgium) which was visited by many interested scientists. The turbine worked well and generated about three times as much power as was consumed by the auxiliary machinery necessary for the novel arrangement. A still larger experimental power plant on the northern shore of Cuba followed. Claude had much bad luck with this plant. Twice, the mile-long tube that was to bring cold ground water to the surface was lost or ruined, and when the plant was finally finished it was found that the auxiliary machines used up more power than was generated by the turbines and dynamos.

The experiments at Matanzas da Cuba were a complete failure as far as this particular venture was concerned, but they did not disprove the feasibility of the principle. In fact, Claude was not discouraged, and had the French steamer Tunisie rebuilt for his purposes. Much of his trouble had been caused by the fact that the floor of the sea sloped downward very gradually, which necessitated a tube 2000 meters in length to reach a depth of about 700 meters. Dangling from the ship, the tube could be much shorter, since it could be made to stand practically vertical in the water. This reduced the power lost in pumping the cool water. Surprisingly enough, the new power plant was not a great success either. There was always trouble with the long tube and with- the auxiliary machinery.

WHEN these failures of the application of a sound principle became known, the Germans, Wilhelm Schmidt and Dr. E. Bräuer pointed out that they had published (independent of each other) treatises on very similar power plants in 1922 and in 1924 respectively.

Both

of them had apparently known of
d'Arsonval's paper, and had not devi-
ated from his suggestions as had Claude.
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of liquids of low boiling point, instead of water in a partial vacuum, as tried by Claude) were followed, some of the auxiliary pumps and condensers would become obsolete, which might simplify the plant sufficiently to make it practicable.

Dr. Barjot's suggestion is essentially the same, but works with still lower temperatures. While the d'Arsonvale-Claude-Schmidt-Bräuer project applies a "hot" liquid of 30°C. and a "cold" one of about 8 or 10°C., Barjot wants to use water of only about 4°C. as his "hot" liquid, and cold air, or ice, at more than 20°C. below freezing point. His proposed power plants have two tremendous advantages: they will be established in regions where there is no other source of power, and they lack the long tube that annoyed Claude so much. Barjot's water tube is only long enough to reach through the ice a few dozen meters at most.

Claude's project, as well as Barjot's, is actually a solar power plant. The difficulties encountered in the various experiments show again that it is by no means easy to harness solar power.

But what about Lunar Power? Everybody knows its manifestation-the tides. Their power is so enormous that we can afford to neglect solar energy if we succeed in putting the moon on the job to supply our energy needs.

Primitive tide power plants have existed about as long as windmills. The first watermills running with the stream of the tides are mentioned as early as the eleventh century, and since then the problem has again and again tempted the imagination of inventors. But it needed the development of electrical power engineering to ripen the various ideas for serious discussion.

Probably the first experimental electric tidal power plant was built in 1913 near Husum, on the North Sea, by an engineer from Hamburg, E. F. Peine.

Peine planned several large tidal power plants. The small experimental plant

near Husum was only to answer certain questions frequently brought up in scientific meetings. The small plant was a complete success; all the assertions Peine had made were proven to be correct. Unfortunately, the work was interrupted by the World War, and was not resumed afterward in Germany.
But other countries began to pay attention to the "new" method to win power from other sources than coal and oil. Soon after the war, a medium-sized tidal power plant was installed at the mouth of the river Diouris in the Betragne, France. Naturally, tidal power plants work intermittently; therefore the French plant was coupled with another power plant six kilometers upstream. Both together furnish the current needed in the arsenals of Brest; the nearest larger town.
It seems that tidal power plants will be of great importance in the near future. There are only minor practical difficulties to be overcome. But they do have the big drawback that their power is not steady. The best of many possible solutions for this drawback seems to be the one that has been suggested for steadying the power of wave power plants. As long as the tides are running in or out there will be some excess power that can be used to pump water into an elevated reservoir. This then helps to supply the demand during the comparatively short pauses between the tides. It is true that this auxiliary power plant increases capital expenditure in an unpleasant manner, but there is no other way to do it. The other methods of storing electric energy are still more expensive.
THE LARGEST project among the many that have been made is still the one that was announced several years ago in
England. There is usually a very high tide at the mouth of the river Severn

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where it empties into Bristol Channel. The project called for damming Bristol Channel near Beachley, for building a long-needed railway bridge close to the dam, for creating an artificial lake near Tintern by draining the river Wye and for installing a power plant of about half a million horsepower. The probable costs of this gigantic project were estimated at 30 million pounds.

The project soon found severe criticism and finally it was decided not to continue until a number of technical questions were solved. For this purpose, a small experimental plant was built in the vicinity of the planned dam. The engineers that constructed it tried to find a solution for storing the power other than in an artificial lake. For auxiliary power they used a steam power plant with electrically heated boilers. They then constructed a large heat-insulated storage boiler to store steam. If this method works out as well as it is hoped by its inventors, it will be an important step on the way to efficient tidal power plants.

Of the many other projects, only the one of San José Bay in the Argentine shall be mentioned. Conditions for a tidal power plant are ideal in this spot. San José Bay has an area of not less than 780 square kilometers, but to dam it, a dam only seven kilometers in length would be necessary, because its mouth is very narrow. At the same time, there are always strong and high tides to be found in the Gulf of San Matias. And, since the bay south of San José Bay, Nueva Bay, gives access to the same territory controlled by San José Bay, it would not even be necessary to put locks in the dam, which, of course, makes matters easier and saves much money. It has been calculated that the dam could conveniently hold 376 sets of water turbines, coupled with generators. About 15 million kilowatt hours would be generated daily twice this amount when there is spring-tide. The pauses between the tides would last only for one and a

quarter hours, which could be bridged easily. Since the Republic of Argentine has to import several millions of tons of coal per year, one can understand that the government is very much interested in tidal power plants, and has had a number of other bays with similarly favorable conditions investigated for the same purpose.

The plans for "Lunar Power Plants," harnessing the energy of the tides, have doubtless progressed farther than any other plans for finding and harnessing new sources of energy. Only volcanic power plants have progressed beyond that stage; they are already in existence. If one compares the matter-of-fact language of tidal power plant inventors, with the many "if's" in the speeches of scientists trying to harness solar power, one feels like abandoning solar power altogether and putting the moon to the job instead.

Thomas Calvert McClary
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an appalling shock area-while a damaged time
machine weaves eras into an unstable pattern! 11
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Leigh Brackett 62
She was like a dream come to life with hair of tauny gold and the glowing face of
smiling angel-but she was not haman!
THE GREATER CONFLICT
Raymond F. Jones 92
At last Cal Meacham of the Peace Engineers finds the answer to his problem, but
he does not find it anywhere on Earth!
THE VOICE OF THE LOBSTER
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THE READER SPEAKS
(Continued from page 8)
you can look up quickly such things as
escape velocity of Neptune, the name of
er's third satellite, the reflecting power
e earth or the exact length of the Martian
Such facts are annoyingly hard to dig up
you need one in a hurry-and what
ce fiction and space-travel addict does not?
this and Bonestell too! Can you afford
to own it?
To which we can offer only a hearty
en. THE CONQUEST OF SPACE is
ond question the most magnificent pub-
ing achievement in science fiction his-
7. We recently had occasion to talk to
Ley about his gorgeous collaboration.
the course of the talk we mentioned the
that we were having a difficult time
bining possession of our review copy.
Mr. Ley sighed and said, "I know-I've
a half dozen copies lifted myself."
Once in possession you may have to be-
e a hermit to keep the book-but take it
am us it's worth it.
M
OUR NEXT ISSUE

URRAY LEINSTER once more steps
into the lead-off spot in the April
WS with a brilliant display of his inven-
ve genius in PLANET OF THE SMALL
EN, a short novel which may well be
estined for Hall of Fame honors at some
sture date. For this is Leinster at his best
a story of incredible space-spanning and
be unbelievable creatures to be found on
stant worlds.
Its action and there is action aplenty-
ccurs in an era when men have mastered
aterstellar distances as well as themselves
and are engaged in utterly peaceful explora-
on of the galaxy. They travel in yachts
ather than destroyers and their interest
not in conquest but in learning of the
istence of far suns and planets and the
ings, living and dead, upon them.
The Carintha is such a ship of peace-
al exploration. It is piloted by Lon Howel
d the company includes his fiance, Caryl,
er father, a noted botanist, and Burton,
noted interplanetary hunter. They are
joying their jaunt through the space-
says when suddenly they are attacked by a
hip from an ugly yellow planet, pursued
brough overdrive to another distant globe
and shot down.
But they do not crash. Some unforseen
force slows the fall of the damaged space-
raft and they escape its wreckage just
time to avoid annihilation by an atomic

missile fired by their pursuer. They are
trapped in a hopeless situation.
And then they discover or are discovered
by the very human inhabitants of their
new planet. Pygmies they are in size but.
it quickly becomes apparent that, descended
from man's common ancestor, they have
developed far beyond in culture, in science
and, ultimately, in courage.
Their life is simple and casual but their
devices are such as to keep the Earthly visi-
tors goggle-eyed. And when the destroyers
from the yellow planet return in force, bent
on destruction, their methods of defense
are as unusual as they are effective.
If you want to know how a garbage dis-
posal unit can be used to check an atomic
attack, how compressed air can be used

for flight, how television can be used to conquer both time and space-you'll want to read this story. It is Murray Leinster in top vein-which is enough said.

James Blish takes over one of the novelet spots with THERE SHALL BE NO DARKNESS, a terrifying tale of lycanthropy (werewolfism to you) and its effect upon folk of today, gathered in an isolated country estate. His explanation of the phenomenon is as ingenious as his motivation and characterization are sound.

We have not run a story about lycanthropy in many years-not because we have not wished to but because the bulk of such stories submitted have been unbelievable to the point of the ridiculous. In THERE SHALL BE NO DARKNESS Mr. Blish has come up with a magnificent exception to this all-too-definitive rule.

Our second novelet should be, to many readers, the outstanding story of the issue, if not of many. JOURNEY FOR SEVEN by John D. MacDonald, whose new full length novel to appear in the May issue of our companion magazine, STARTLING STORIES, may well be the stf novel of the year, is a very different type of science fiction story.

It involves the driver and passengers of a battered bus who happen to be passing an atomic power plant when something goes a little wrong. They receive a full charge of the unpredictable power with some very astonishing results. Their reactions to a strange mutation and their effect upon society make this a powerful and welcome novelty in the field of pseudo science.

There shall be shorts-of course and in

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THE READER SPEAKS
A DEPARTMENT FOR SCIENCE FICTION FANS

EXACTLY one month from today this magazine is going to have a new companion. The name of this soon-to-arrive member of the science fiction family will be announced soon and it promises to fill a long-empty gap in the field.

For many years now we have received -by letter, by telephone, by word of mouth direct, and by virtually every mode of communication save carrier pigeon-laments over the unavailability of most of the great stories published from ten to twenty-five years ago during the so-called "formative" period of atf writing.

Few of these hundreds of stories have received the publication in book form- either as novela or as parts of the recent wave of anthologies which guarantees a certain degree of permanence. For the most part the magazines which printed them have long since been consigned to the waste basket or the fireplace or have crumbled to illegibility.

In our current and well-loved companion, STARTLING STORIES, the Hall of Fame reprint feature has for eleven years brought some of the best of them singly to life. But this effort has barely scratched the surface of the huge backlog of magnificently imaginative stories that has too long been consigned to oblivion save in the bookcases of a scant few ardent and faithful collectors.

Rich Pickings

Furthermore the limitations of the Hall of Fame have not permitted the reprinting of the longer stories, scores of which run to full book-length. Our new companion is to be a big magazine, one which will permit the publishing of at least one long novel per issue, as well as a goodly number of novelets and short stories. It promises rich pickings for avid fan and general reader alike

Leading the opening issue will be Edmond Hamilton's unforgettable novel of the inner core of Earth, THE HIDDEN WORLD, one of the most imaginatively-stirring stories this still-very-active author has ever written. It will be backed by at least two novelets, VISIT TO VENUS by Festus Pragnell, and THE MAN FROM BEYOND by John Beynon Harris.

For the other stories and novelete the Stanley G. Weinbaum, Richard Vaughan, selection will be made from the best early works of su authors as Eando Binder, scores of others. This soon-to-appear magazine will provide not only magnificent stf Raymund & Galm, Fletcher Pratt and provide modern readers with a chance to entertainment in its own right but will compare the very best from the allegedly "good old days" with current trends and craftsmanship in the field.

A Magnificent Volume

It has not been our custom to give over this space to the reviewing of current science fiction and fantasy books. But cus tom is created not only to be followed but to be shattered on occasion-and this looks to be a suitable occasion.

The cause is the recent publication of a magnificent volume of plates and printed matter by a pair of men who rate as greats not only with devotees of stf but with sci-

entists themselves. We intended to review it here ourselves but a certain moderately
(Continued on page 8)
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CAN YOU FIX IT?
These wonder books coll
step by step HOW to
make di cult repairs and
adjustments, how to
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Engine troubles and how
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11
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express collect. If after 30 days use I prefer to keep them, I will
[AD] send you $2 and pay the balance at the rate of only $3 a month until
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Please attach letter stating age, occupation, employer's name and
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Who Use Secrets of NATURLAW." is theme of inspiring 16-page
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THE READER SPEAKS

(Continued from page 6)

well-known science fiction author volu
teered out of his own enthusiasm to wri
us such a review.
We accepted gratefully and herewith giv
you-

THE CONQUEST OF SPACE by Chesley Bonestell
Willy Loy, Viking Press, New York ($3.95). Reviewe
by Robert A. Heinlein.

This book could be reviewed in three word
"Go buy it!"
Willy Ley's deft and lucid handling of th
intricacies of space travel is not new to th
TWS family. Chesley Bonestell's breath-takin
astronomical and space travel paintings_ar
certainly almost as well known to you. The
have appeared in LIFE, Coronet, and man
other places. Here we have them together,
a beautiful quarto volume. They go togethe
like ham and eggs.
No matter how many times you have rea
Ley on space-ships, you will find this a fres
account, told with his usual easy humor. A
to the Bonestell paintings, this is the first
time they have been gathered in one place
and they take you all over the solar system
from a rocket fueling on earth to the eternal
snow of Pluto, with frequent stops at all the
way stations.
There is nothing like a Bonestell painting-
they seem to be color photographs, taken im-
possibly before the fact. There are fifty-eight
Bonestell plates in the book, twenty-three of
them in fine four-color reproduction.
It will be tempting to take a razor blade
to some of them and frame them, even though
it would involve the violation of a beautiful
volume. I had the good fortune to get a defec
tive copy-"defective" in that the binding ma-

chine had duplicated sixteen whole pages of Bonestell plates. Naturally, I refuse to swap it. I can have framed copies without damaging my book! (Examine carefully each copy in your book store; the binder may have done it mor than once.)

In addition to the pure joy of owning this beautiful and instructive book, there is another advantage. Perhaps you get tired of dunder heads who scoff at science fiction, the dimwit who picks up your copy of TWS and says "You read that stuff?"

Slip him this book. Let him read it-if he can read. If not, let him look at the pictures If there is anything in him to save you will have made a convert.

Willy Ley's text is in four parts-rockets and space ships, starting with a detailed account of a present-day firing at White Sands- a discussion of the Moon Rocket and the moon itself a tour of the solar system-and finally a discussion of the little planetoids. He has thoughtfully included at the beginning a two-page tabulation of "vital statistics" about our family of planets.

This bonus is a valuable feature of the book;

(Continued on page 139)

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MAGAZINE: AMAZING STORIES
DATE: MARCH 1940 VOLUME 14, NUMBER 3
FEATURES: WHAT'S WRONG WITH ROCKETS?
AUTHOR: WILLY LEY
PAGES: 39, 49, 127, 145.

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MARCH
1940
VOLUME 14
NUMBER 3
BLACK WORLD.
AMAZING
STORIES
ontents
STORIES
..by A. R. Steber..
John Carver finds the path of duty isn't very clear when a whole solar system is shrouded in mystery.
THE STRANGE VOYAGE OF DR. PENWING by Richard O. Lewis..
40
Einstein says the universe is curved, but Dr. Penwing had a ship that could travel in a straight line!

PAUL REVERE AND THE TIME MACHINE.. by A. W. Bernal.
50
Paul Revere couldn't change history. But how could he make that ride while stranded in 1940?
VAGABONDS OF THE VOID..
by Peter Horn.
66
The Tuckies were happy when they found a world to call home, but it seemed too good to be true.
THE SCIENTIFIC PIONEER.
.by Nelson S. Bond..
88
There was something uncanny about the way Hank could answer problems that baffled science.
TERROR OUT OF THE PAST.
..by Raymond Z. Gallun...
100
What was the purpose of this vast, ruined fortress, buried beneath the debris of a million years?
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L
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Back Cover painting by H. R. Hammond
Illustrations by Robert Fuqua, Leo Morey, Julian S. Krupa, William Juhre, Joe Sewell
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Volume XIV
Number 3

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WHAT'S WRONG WITH ROCKETS?

By WILLY LEY

One of today's foremost rocket authorities gives us his viewpoint on the shortcomings of rockets.

O

N October 14, 1935, an experimental all-metal rocket rose from a proving ground near Roswell in New Mexico and, driven by gasoline and liquefied oxygen, attained an altitude of 4,000 feet. On May 31, 1935, the same rocket had ascended to an altitude of 7,500 feet. It had been built and designed by Professor Robert H. Goddard.

A few years earlier, in July, 1933, a 220-pound all-metal rocket built by engineers of the German Rocket Society had made a flight near Magdeburg. It was flight No. 106 or 107 of the liquid fuel rockets constructed by the Society mentioned. At about the same time rockets built along the genral lines of the German models by the American Rocket Society made flights at Staten Island.

But since then nobody-with the possible excrption of Professor Goddard, who declines to speak-did very much actual work. Rocket rearch, that five or six years ago had been actively and vigorously pursued by quite a number of people in various countries, practically disappeared from current history and even the word itself does not mean much to most people except as the term for a device required in the plots of some comic strips. And those that do remember are apt to ask what was wrong with those rockets. Why was research abandoned just at that mozent when those things called (partly for want of a better name) liquid fuel rockets had shown that, after all, they could fly? Did they not live p to the expectations of their designers, whatever these expectations may have been? And what were they built for, anyway?

As to the last question, I happen to know with aboslute certainty that they were not "attempts to reach the moon. Neither were they "forerunars of transatlantic rocket airplanes.'

And they
abo were not, as could be read occasionally in European newspapers, "future deadly instruments of war."
They were honest and very serious attempts to solve certain purely scientific problems and also to And out whether the principle of reaction against a jet of flame which motivates all kinds of rockets cannot be used to advantage for various purposes. Theoretical investigations had shown that rockets should be able to do a lot of things. But that same investigation had also shown that the existing commercial type of rockets, propelled by a zhtly compressed "slow" powder-mixture was not cient. It had shown, furthermore, that powder rockets never would be much more efficient than they are at present, in fact they were almost the

most inefficient type conceivable, having only the two advantages of venerable old age and easy construction.
Thus various individual experimenters and a few groups of experimenters set out to build liquid fuel rockets. The crucial point in the beginning of the work was whether one could dare to inject liquid fuel from one tank and gaseous and/or liquid oxygen from another tank into the same combustion chamber without inviting inevitable disaster, at least for the rocket itself, possibly for all those nearby. Experts on liquid fuels and liquid gases insisted that explosions were inevitable. But Professor Oberth of the German Rocket Society (and, unknown to him and even a little earlier, Professor Goddard of Clark University) tried it and no explosion occurred. Explosions came later but then experimenters knew already that they occurred only if something was not quite right. If it had happened that the very first experiment had ended in a serious explosion-as was even likely since nobody knew anything of all the mistakes that could be made-rocket research might not have started at all. Then the liquid-gas-experts that had prophesied disaster would have been believed to have been right. Fortunately nothing serious happened and thus research was continued.
The actually flying liquid fuel rockets-at first only so-called rocket motors on fixed proving stands were tried-built later on did perform in accordance with theory and expectations, generally speaking. And even the most skeptical observer will admit that an entirely new device works pretty

well if it climbs to an altitude of a little over a mile not quite two years after the first experiment during which time a groping and fumbling sort of research had to eliminate dozens of blind alleys before it could go ahead on the right way. In those experiments in which I took part it took a few weeks more than one year to see the rocket fly, counting from the day where the first sketch in a pocket notebook was drawn during a railroad ride. And in less than one year after that first flight small rocket models climbing to a half or a full mile of altitude were commonplace and shown to visitors on request while the big models were cooling off from test runs in another corner of the proving ground.

Why did progress stop just then?

In all the calculations that were made previous to an actual experiment there had invariably been

(Continued on page 49)

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AMAZING STORIES
WHAT'S WRONG WITH
ROCKETS?
(Continued from page 39)
"if" symbol. In this country that symbol would have been $, in England it would have been £, in Germany it was RM meaning cash.
Progress in rocket research has been stopped by lack of funds and for no other reason!
Although that situation was always just around the corner-in more precise language: "We'll now go ahead with experiment 124 and 125 which will need two weeks, if there is no money coming in during that time we can't go on with 126"-it was not so very noticeable at first.
But a few words of explanation where money came from at all are, perhaps, necessary. Professor Goddard is working with grants from the Guggenheim Foundation and similar institutions, but he is the only one of all rocket experimenters who ever was lucky enough to get grants. Most of the experimental work was done by societies founded especially for that purpose (to get money for experiments) and since it furthermore was the most successful of all and, finally, since I as its vice-president for many years have knowledge of the facts it might well be used as an example.
The Society had been founded in 1927, at first mainly as a kind of scientific debating club, devoted to discussions of rocket research, of astronomy and some allied questions and to the publication of a monthly journal to further interest in those problems. Very quickly a part of the chest of the treasury was set aside for possible experimentation. After only a few months it was decided that special efforts should be made to accumulate money for experimental research. But before the amount became worthwhile a lucky combination of circumstances helped. The UFA Film Company decided to take a movie based on a rocket story plot. Professor Hermann Oberth,

then president of the Society, was called for supervision of the scientific details and finally some research money could be extracted from the publicity department. Meanwhile the membership of the Society had mounted to close to a thousand people which promised a backing after the movie episode in the life of rocket research was over. Thus experimentation was boldly begun.

The Society finally did have the money to continue the research. Gifts of money, and even more important at that time, material and machinery came from a few well-to-do members, a proving ground was furnished by the city and a few idealistic engineers decided to work without a salary-just for shelter and living expenses-until steady financial support could be created somehow. Influential people at that time said that they, or the firms they represented, would back experimentation if it could be demonstrated that liquid fuel pockets could outfly powder rockets.

The scheme worked very nicely for one year and could, with some strain, be made to work for another year, then everything collapsed at once. The reason was then a little hard to perceive and now, in the light of after knowledge, it is not hard to explain.

Paradoxically enough the organization collapsed because its research had been successful.

I think it was Pascal who said that human knowledge can be likened to sphere, the more it expands the larger the number of points where its surface touches the unknown. Unfortunately that applies to financial demands also.

In rocket research an experiment that failed meant only repetition under slightly changed conditions. It may have failed only because a poorly made welding seems opened up or because one certain plug and hole was not exactly straight. The financial expenditure connected with such a repetition on the same scale is bearable.

A successful experiment is a different story. It does not mean one other experiment, but several, usually many of them. It means material, fuel, new designs, oftentimes new equipment to handle larger pieces of work, new and more sensitive (and much more costly) instruments for observation and record. Thus it finally meant that the financial requirements could not be met anymore by the sources and by the methods that had worked fairly well for some time, especially since it so happened that business conditions were

getting worse and worse.
When that work had just been started and was in the first stages of progress imaginative people in other countries tried to further rocket research by imitating the German Rocket Society. Most successful, by comparison with other groups, was the American Rocket Society in New York that owes its existence mainly to the personality and perseverance of its first president, Mr. G. Edward Pendray, who came to Berlin for a visit early in 1931. The American Rocket Society did progress to actual experimentation, it made a fairly large number of ground tests with rocket motors on a proving stand and three flights. But that financial vicious circle I outlined above caught it even more rapidly than it caught the German Society. Another promising group, the British Interplanetary Society in London has just found its end due to the War, about three weeks prior to the completion of their testing stand.
I have to state, however, that I do not believe that a Society, unless backed by a few 'very wealthy and very generous members, has a chance to progress much further than the German Rocket Society did. Besides experimental work under the auspices of a society is usually harried by the fact that the work to be done is decided upon by committees. Discussion and talk might clear up doubtful points and though it usually does not solve scientific problems might at least clarify them to such an extent that they attain definite shape. Too much talk, however, resulted in the premature death of two Russian rocket societies.
(Continued on page 127)

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What's Wrong with Rockets?
(Continued from page 49)
It is, in fact, more likely that good results will be obtained if one man is put in a position to work alone with only a few assistants along one single line of research-even though it may not be the famous and mostly unknown "line of least resistance"-than if three presumably brilliant men handicap each other. The result in that case is at least loss of time and inefficiency, often worse.
Such a statement naturally gives rise to the question: what amounts of money are needed to carry on? To answer this it is not only worthwhile but even necessary to state in condensed form what has been achieved already and what should be achieved next.
The work already done consisted of finding ways and means to handle the theoretically advantageous liquid fuels, to show that rocket motors can be made to work, to work with sufficient power and to work for sufficient length of time. That length of time is surprisingly short; one or two minutes are long enough for most purposes, actually rocket motors have been made to stand the terrific strain of the continuous explosion going on inside of them for twenty-five minutes. The power or thrust exerted was also promising enough; it remains only to increase efficiency. Fortunately that cannot be very difficult to do, because there exists no simpler engine than a rocket motor. It consists of only three parts, the injec-

tion nozzles which force continuous streams of fuel and oxygen (and, in some constructions, a cooling medium) into the second part, the so-called combustion chamber where the mixture is ignited and burned to escape through the third part, the exhaust nozzle. To increase the efficiency of that assembly one must not do one thing, one must not make it more complicated. The secret is one of proper shape and size, to be determined experimentally after theoretical investigation has ruled out those shapes that certainly do not work.

Aside from the rocket motor a liquid fuel rocket consists of two or three tanks, one for fuel-gasoline, alcohol and light oils have proved themselves to be very good, efficient and reliable rocket fuels one for liquid oxygen and the third for compressed nitrogen to force the contents of the other two tanks into the rocket motor. The tanks are usually tubular to decrease air resistance and are grouped either in the form of a triangle or in one straight line. There are a few stabilizing fins placed in a convenient position and somewhere there is a compartment for a small parachute with a simple device for ejecting it at a set time.

The whole thing works in the following manner: After nitrogen pressure has been brought to bear down upon the liquids, and the valves that block the fuel lines to the motor are set to be released simultaneously, the ignition system is made ready. It usually consists of a jet of flame produced by a blow torch fastened to the launching rack and playing just underneath the exhaust nozzle of the rocket. Then the fuel valves are released, fuel and oxygen shoot into the combustion chamber and, coming out through the exhaust nozzle, catch fire. Unlike an internal combustion engine with pistons a rocket motor does not require continuous ignition, once ignited it works until the fuel supply is exhausted or cut off. The rocket then rises from the launching rack, fairly slowly at first but accelerating steadily. As long as the rocket motor works the speed increases although not exactly according to the rate of acceleration. On the one hand the acceleration increases because the weight of the rocket decreases (due to the consumption of the fuel) while the thrust of the rocket motor remains the same, on the other hand the air resistance grows with mounting speed. All these factors can be calculated however, and calculation as well as actual experiment have shown that, generally speaking, the speed of the rocket is highest at the moment the fuel supply is exhausted. There-

for the rocket does not fall back as soon as there is no fuel left. It then behaves exactly like a projectile fired from a cannon. It continues to rise until air resistance and the influence of gravity stop it.

It is for that moment (calculated in advance to within seconds) that the clockwork mechanism of the parachute ejector had been set. It started to work automatically when the rocket pulled out of the launching rack. The return is then simply a matter of dropping by parachutes.

Such a performance, which might be termed the "natural" performance of a liquid fuel rocket, lands itself without strain for meteorological research. Many branches of modern activity are tremendously interested to know what happens in the stratosphere. Aviation likes to learn about it for the direct purpose of stratosphere flight. And since it is more than likely that conditions in the stratosphere influence or even control the weather in lower layers, the results of stratospheric exploration will in all probability be of great value to navigation, to ordinary aviation, to agriculture and to every other activity concerned with or influenced by the weather.

There exist many good instruments that are perfectly suited to inform us about conditions in the stratosphere. But they have to experience these conditions first, in other words they have to be brought up beyond, say nine or ten miles. Stratosphere balloons can do that and have done it, but they are risky and tremendously expensive. So-called "pilot balloons," small un-manned halloons that carry a bundle of instruments, burst at the ceiling of their flight and return the instruments by parachute, can do that too. But although they are inexpensive they are unreliable as well, being carried by the wind in whatever direction it happens to blow. Many of them are lost completely and the altitude they reach can never be predicted. These instruments

(Concluded on page 145)

[PAGE BREAK]

inter world would attack him, since he would be allen, and since life in such a world would depend on strife for its existence.

Like a hothouse, this inner world would produce giant fungus-like growths, and tremendous toadstools and mushrooms would sprout everywhere,

more than likely poisonous.
It
Certainly, this inner hollow of the earth would
be nowhere near as ideal as the outside.
live. In fact, it is to be doubted if mankind could
would not be a comfortable, or desirable place to
even live there, even under advanced scientific
WHAT'S WRONG WITH ROCKETS?
(Concluded from page 127)
for pilot balloons weigh from two ounces to about
two pounds. Even the experimental rockets al-
ready built could easily carry three pounds of
They weigh about twenty
additional load.
pounds themselves, being approximately nine feet
long and having a diameter of two inches. A
rocket designed to reach an altitude of say fifteen
miles would have to weigh around fifty pounds, if
constructed in the same manner as the experi-
mental models it would have to have a diameter
of about three inches and to be about fifteen feet
long. To attain the fifteen mile altitude from sea
level about three minutes would be needed.
Compared to squnding balloons such a rocket
would have the advantage of having a predictable
altitude. The instruments would experience drift
only during the descent by parachute-if necessary
they could be traced by a small wireless device
built into the rocket-and would be ready for
examination in a much shorter time since the
rocket climbs much more rapidly. And while a
bursted sounding balloon is worthless the rocket,
which returns with the same parachute, needs only
cleaning and re-fueling to be ready for another
ascent, at an expenditure of about $12.00.
The point is that fifteen-mile rockets do not yet
To build them would need some more te-
search and a few intermediate stages. The one-
exist.
mile rockets that existed five years ago would have
to be reconstructed, then to be enlarged to three-
mile rockets, five-mile rockets and finally to fif-
teen-mile rockets. Fortunately things get much
After all this the question about the capital
easier as soon as the six-mile altitude is passed.
needed can be answered. To make the first five-
mile ascent would require some twelve to fifteen
months of research work, to do the rest would
A very careful
need not quite another year.
estimate of the expenses for such work (leaving
some margin for possible minor accidents and set-

backs) which I made sometime ago resulted in a budget of about $1500.00 a month for the first twelve months and about $300.00 more per month for the second year.

This is not a tremendous amount of money but it is far beyond the possible means of a

conditions. It would mean a constant, unrelenting warfare against a savage world.

In a constant temperature such as must exist in in enclosed world, there would be no such thing as rainfall. There would be only a tremendous and constant precipitation of dew. Temperature changes are necessary to cause rainfall. There would be no clouds, constant central-sunshine, and unremitting heat. The only precipitation would be at the opening, resulting in a snowstorm at the pole. Is this where we get our polar caps? That's the theory. You can take it or leave it.

society. A society that were to spend about [AD] $20,000.00 a year on research would have to have between 15,000 and 20,000 paying members, each paying $3.00 membership dues a year. It seems that there are not yet 20,000 people in the world that know enough about rockets and think enough of the importance of rocket research to support such a society for a number of years.

Of course there are a few other possible ways. The most promising of them seemed to be advertising since successful rocket ascents should attract considerable publicity. After all, even a five-mile Bhot would mean an altitude record for rockets and therefore have some "news value."

Of course, seen from the standpoint of a scientist the ethics of science would benefit mope if the money were forthcoming from some privata individual who could, incidentally, achieve consider. able personal fame as the result of his connection with the work. But as the good old Latin saying "non olet," meaning "(money) doesn't smell" implies, rocket research could digest the "disgrace" of being an advertising medium. If the inventors of printing presses and the wizards of wireless don't mind I fail to see why the masters of rocketry should be more squeamish.

But a good many efforts made in that direction failed to bring results. Not that my word as to the possibilities were doubted-I counted only one exception who doubted that anything new could be invented-the results already achieved were proof enough for that. Only a few declared that the sums of money involved were too large. But

none was willing to wait for two years! I cannot tell why, although I often asked that question. The reasons given were different, probably not all of them truthful. But no matter what the real or pretended reasons were, the fact remained that nobody wanted to wait. Three months, if necessary even five, yes. Fifteen months or a year, nol And that is what is wrong with rockbts.
However, I do not worry about the future. For many years people could have asked: "What's wrong with airplanes?" Before that time they could have asked: "What's wrong with aluminum?" And there was a time when that question applied to automobiles and even to railways. Every one of these inventions and Industries experienced a period when one could not tell whether they would live or die. They all lived and proved to have a future. So will rockets!

[PAGE BREAK]

MAGAZINE: AMAZING STORIES
DATE: MARCH 1940 VOLUME 14, NUMBER 3
FEATURES: WHAT'S WR

[PAGE BREAK]

DISCUSSIONS
Sirs:
AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brick-bats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get in with the gang and have your say
NO CINCH
This is my first letter to AMAZING STORIES, and as a matter of fact, to any science-fiction mag, and if I convey one thing, I'd like to say that in my opinion, AMAZING is the best of the mob. And, brother, I read 'em all.
However, the Discussions column bores me no little, simply because the fans display such an adolescent interest in illustrations. They don't realize that you're giving them the best possible illustrations you can get and that if you could get better artists you wouldn't be in the pulp class, I suppose. Again, drawing for pulps is no cinch, what with all the gadgets, etc., and the readers never take that into consideration Fuqua, Morey Krupa, Paul-there's no outstanding difference, and I'll argue that out to my last day
Nelson S. Bond, I suppose, is about the best of the crop right now as far as authors go, but I'm

wondering if you're not pressing his stuff too much. I sincerely hope he doesn't turn out to be a flash in the pan, because he's too good for that

Sirs:

Rick Boyd,
342 W. Orange St.
Lancaster, Pa.

A LEWIS FAN

Although at the bottom of your list, The Fate Changer," by Richard O. Lewis is "tops" with me in the September issue of AMAZING STORIES, your magazine contains some very fine material. I liked this one particularly because it tells the story so convincingly and without annoying, superfluous detail Iti intensely interesting and has an elleve imaz In
1 was completely
fooled I had it all figured out dillerently, and to In mil, this the test over good story

Hoping for more stories from the pen of Richard Lexus

John V Ryan,
015 5th Ave, So
Clinton, la

Mr. Lewis has been coming along, and you'll find another of his stories in this issue. It's a story [st echt to intrigue you greatly, and we hope you find time to make a few comments on it. -Ed.

Sirs:

LIKES CARL SELWYN

I selected the story "The Strange Death of Rich ard Sefton" first because it is something different Here is one story that kept me guessing 'till the very end. It would be very nice if more of its kind were published.

Mrs. Isabelle Schwartz.
133 Van Buren Street,
Brooklyn, N. Y.

Mr. Selwyn will be very glad to know that h story kept you guessing. That was his purpose, and if he achieved it so successfully, you may be sure that he will try to do it again. We think that Mr Selwyn, (who is only a youngster) will develo into one of the finest science fiction writers in the field. And we want to go down on the record for this prediction!-Ed

Sirs:

LOST CONTINENT?

Although I personally doubt that "Atlantis" was a lost continent, or even a lost island, in the

Atlantic ocean and tend to believe that it was just another name either for a city in the Shott el Jerid (North Africa) or for Tartessos-Tarshish-Scher near the mouth of the Guadalquivir, I admire the way Bond wove a tapestry of a great number of different and unconnected legends
Williams' "Rockets Over Europe" was also in geniously constructed from suspicions, guesses, and reports. But I cannot possibly endorse (not even in a story) a mechanism that turns a rocket around in flight, especially when it has almost reached its target and has, therefore, a very high velocity and certainly no fuel left for a return trip, even if there were no velocity to be killed.
134
Sirs:
Willy Ley,
35 10th Street,
Long Itand it, Ny
CONGRATULATIONS MR. BOND
Having just finished the concluding installment of "Sons of the Deluge" (one of the few serials that ever appelaed to me), I want to express my opinion that the story combines all the best feat ures of scientific fiction with hardly any of the bad ones.
It goes to bea
Khayyam in
verses 4-11 of :
well as by many
Mr Bond is
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tion that have
Atlantis, 35 W
familiarity with
languages
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MAGAZINE: THE SATURDAY REVIEW OF LITERATURE
DATE: 16 JANUARY 1954
th
561 of 91
amazing to my KS

[PAGE BREAK]

VAM
Which way?
Maybe you feel that way these.
days about your own investments,
You can't seem to make up your
mind which way to go whether
to buy, sell, or hold certain securl-
ties.
We don't know all the answers,
of course. No broker does.
But for many years now,, we've
been plotting the progress of most
major industries... keeping track
of the more important companies
...erecting the best road signs we
can for the benefit of investors.
If you've been wondering just
what course you should follow
yourself...
If you'd like to know just what
we think of any given stock-or
your complete portfolio-just ask.
And the more you tell us about
yourself your financial situation
and your investment objectives-
the more helpful you'll find our
answer
Customer or not, there's no
charge for such an analysis, no
obligation. Just address-
WALTER A, SCHOLE
Department B-63
MERRILL LYNCH,
PIERCE, FENNER & BEANE

70 Plae Street, New York 5, N. Y.
Office is 105 Cities
lavest for the other thing, in life
SR/IDEAS
The Saturday Review
JANUARY 16, 1954,
Cover Photograph (Sell Portrait) by Cell Becton
BARE POETS RETURNING TO LYRICISM? by Melville Cane
10 LEONARD BACON AND MARJORIE KINNAN RAWLINGS: An Appreciation
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SH/BOOKS
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18 THE YEAR ONE, AND OTHER POEMS, by Kathleen Raine
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34 TV AND RADIO, by Robert Lewis Shayon
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A
SR's Library Poll
VOLUME of historical romance
and an experienced journalist's
appraisal of the present-day European
scene are the two titles appearing for
the first time this week on SR's Bur-
vey of popular reading tasto as re-
ported by public libraries across the

country, Frank Yerby's "The Devil's Laughter" is the item for escapists and Theodore H. White's "Fire in the Ashes" is the book concerned with contemporary affairs of international Importance.

1, Lella

TITLE AND AUTHOR

by André Maurois (G)

2. Lord Vanity

by Samuel Shellabarger. (F)

3. The Power of Positive Thinking

by Norman Vincent Peale (G)

4. Too Late the Phalarope

by Alan Paton (F)

5. The Adventures of Anglo March

by Saul 1 Bellow (F)

Here to

to Eternity

6.

by James

Jones

7. Beyond This Place

(F)

by A. J. Cronin (F)

8. Time and Time Again

by James

9. Bahle Cry)

by Leon Uris (F)

10. A House Is Not a Home

by Polly Adler (G)

11. Gone With the Windsors

by Iles Brody (G)

12. Désirée

by Annemarie Selinko (F)

13. Life La Worth Living

by Fulton J. Sheen (G)

14. The Calmo Mutiny

by Herman Wouk (F)

15. Sexual Behavior in the Human

by Alfred C. Kinsey et al (G)

16. Flying Saucers from Outer Space

by D. E. Keyhoe (G)

17. The Devil's Laughter

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18. A Man Called Peter

by Catherine Marshall (G)

19. Call Me Lucky

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20. Fire in the Asbes

by Theodore H. White (G)

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■ (G)-General

++)-Fiction

How come
[AD] $1.00 steak from
25
1000 lbs. Steer
at 25.84 por
Packer pays
[AD] $25800
steers?

Production costs of cattle rapers and feeders include breeding stock, death Losses, food and labor, land use, taxes, interest, supplies, equipment and other expenses for the three full years it takes to prodnce and feed a choice grade steer.

590 lbs. Beef
at 41 per lb.
Retailer pays $241

Value of by-products, such as hides,. fats, hair, animal foods, etc, belps offact packers' dreading, handling and selling axpenses, so that usually the beef from a steer actually is sold to the retailer for less than the live animal costs, As shown above, packer pays $258.00 for typical 1000-th steer-sella mest for [AD] $241.90°.

PE

All cuts of beef are equally nourishing If there were equal amounts of all, with an equal demand for all, steak and hamburger and stew meat would all sell at the same price.

But that just isn't the case-co table at right, above.

In general, demand is concentrated on steaks and roasta. This is why porterhouse steak, for example, may sell in some stores for $1.00 while-bamburger sells for 424

If consumers don't want steak

Porterhouse,
Cheb Steak
Mc cate
Price
[AD] $1.00 $35.00
55 38 48.40
50
77 38.50
30 65 19.59
25
B9 22.25
105 35 5775
100 42 42.00
50 56. 28.00
450 lbs. of Retail Cuts
Consumer pays $29140
Retail markup takes into account such
costs-and they've been rising-as rent,
labor, depreciation on equipment and
Axtures, etc. Also there is a low of weight
averaging 140 lbs. from shrinkage, fat
and bones not ealable to consumers.
Prices are typical
badly enough to pay $1.00 for it, the
price goes down. If they demand more
hamburger and the supply does not
increase in line with increased demand,
the price goes up.
That's how the law of supply and
demand works.
Based on actual
Spaw Chicago
market reports of pricature for
choice-grade stars and choice-grade beef, d
October, 1963.
Retall prices shown above are avacages for all-
kinds of Chicago stores, including cand
carty, charge-and-deliver, in h
In high rent areas and
In low rent areas. Prices a some story be
higher... in others lowe.
AMERICAN MEAT INSTITUTE Bearers, Chicage Members rough the US.

[PAGE BREAK]

faddist he, then goes on in a rather
superdillous manner to paint the scl-
entist as some sort of ogre who La-bent
on denuding the U. S of its scientific
brains by marshaling all available
experts and resources to push," bla,
Von Braun's space proposals. He

names only one scientist, Dr. Milton Rosen of the Naval Research Laboratory, to substantiate his charge; elsewhere it la the "men who work with rockets or guided misalles" who get "cold chills" at Von Braun's proposals. Or it's the "practical guided missile men who "scream for salvation" from them, It's a pity that Mr. Leonard does not back his statements by naming authorities, for he is not a scientist and is therefore open to criticism.

-From "Conquest of the Moon.

A moonship on a rurvey of the lunar surface.

THE book also lacks fresh research. It is based to a great extent on two or three books which were published within the last few years in which the Von Braun proposals appeared In spite of this, the author apparently falled to read these works carefully for there are many technical errors. At one point in explaining how a Von Braun rocketship returns to earth from a space station he has the winged vehicle barrel-rolling into the atmosphere Apparently Mr. Leonard completely misunderstood the method governing the return of this vehicle, he has it, and its unfortunate pilot, entering the atmosphere upside down. Elsewhere in describing a three-stage rocketship's fight from earth in the manner proposed by Von Braun he writes: It starts up vertically, but It is turned toward the east by automatic controls while it is still in the atmosphere where its rudders can

"The Conquest of the Moon," by Wernher von Braun, Fred L. Whip grip the air" The three-stage rocket. ship as suggested by Von Braun has ple, and Willy Ley; edited by Cor-
no rudders. It turns left or right, goes mellis Ryan (Viking Press. 126 PP.
or down by the use of swiveling $4.50), considers the problem, in text
altitudes where there is too little air
rocket motors because it operates at and pictures, of a trip to the moon for
to be effective with ordinary airplane- the purposes of exploration. Below it is
type rudder controls. There are many reviewed by Heinz Haber, associated
other inaccuracies, many of them by physicist at the University of California
overstatement or omission. at Los Angeles and author of "Man in
The book's main argument

about
the Von Braun proposals are that he
is advocating a "crash program" to
put man into space. Obviously Mr.
Leonard spent little time reading the
up
many papers Von Braun has written
over the last ten years. In them he
would have found that "beneath the
scientist's ambitious proposals lies a
very cautious, careful plan of de-
velopment. But there is still a great
need for a really critical and construc-
tive appraisal of the Von Braum
thearles; Mr. Leonard's book does not
Ell the hill Indeed, for a book an
space travel if never really gets-off
the ground
Space."
By Heinz Haber
Our Kid Sister
DURING the past three years a
able factor in the economy of a large
nation. Space flight will be a gigantic
enterprise. How big this job is going
to be is related in "Conquest of the
Moon," the work of three experts in
the fields of rocket propulsion, as-
tronomy, and space flight: Dr. Wern-
her von Braun, Dr. Fred L. Whipple,
and Willy Ley. The book is an out-
growth of a series of articles which
first appeared in Collier's magazine.
Cornelius Ryan, associate editor of
Collier's, acted as editor of the book.
The objective of the project de-
scribed is the exploration of a limited
section of the moon's surface. The
personnel of the expedition consists
number of highly publicized of fifty highly specialized and selected
books and magazine articles have scientists and engineers who make
driven home to the public the fact the trip to the moon, land there,
that the feat of the Wright brothers spend a total of six weeks on the
cannot be repeated on an interplane- desolate, airless face of the moon,
tary scale. The Wright brothers built and return to the home planet. The
the first motor-driven airplane in a project requires: (1) a space station
bleycle shop. The design, construc- and (2) three moonships. The space
tlon, and operation of the first space station, or artificial satellite, is a
ship, however, will require a whole huge wheel-shaped structure measur
industry that will constitute a sizing 250 feet across. It is a man-made
moon that swings around the earth moon-night-each two weeks long Brothers in Space
in a circular orbit about 1,000 miles the expedition returns to the satellite

above the ground. The three moon-orbit ships are assembled in the immediate proximity of this shipyard in the skies"; the parts of the moonships are ferried up into the satellite orbit, unloaded, and pleced together in the vold by space-sulted assembly workers The fuel for the ships is then delivered in the same way and finally, when the moonships are fully equipped and tanked, they travel around the earth at a constant speed of 15,840 miles per hour. This speed proves to be an extremely valuable asset for the intended trip, since the moonships require only an additional speed of 3,660 miles per hour launching them into their trajectory to the moon.

The description of this imposing project abounds in engineering, astronomical, and navigational detalla, notions about space travel, have The authors have worked out many changed. A generation or two ago Ingenious devices and a multitude of the subject was the serious concern delicate machinery that form an ef- of a few scientists and science-fiction ficient, functional design of the whole writers only, and the situation was operation. The details are based on much the same at the start of World. our present engineering and astro- War II. But military research had nomical knowledge. In principle all two important effects. In the first designs should work. But there is place, it brought about great progress hardly room for technical failure. The in rocket technology, and theory, job is so big that we are forced to Also, it produced such spectacular operate in the fringe area of engi- results atomic energy, radar, electneering reliability, and efficiency. tronle brains-that skeptician about Each piece of equipment and each all future advances will have to be operation must function as no other tempered with a measure of confidence in the technical powers of

INTERPLANETARY DOPLORATION It is difficult to realize how rapidly popular notions about space travel, have changed. A generation or two ago the subject was the serious concern of a few scientists and science-fiction writers only, and the situation was much the same at the start of World. War II. But military research had two important effects. In the first place, it brought about great progress in rocket technology, and theory, Also, it produced such spectacular results atomic energy, radar, electronle brains-that skeptician about all future advances will have to be tempered with a measure of confidence in the technical powers of man ever has the 11-science. The new attitude toward in-

HE moonships are hudproduct of huge, weird-lookding structures measuring 100 by 110 feet. Fuel and passengers are stored in huge nylon spheres attachod to a sturdy duralumin framework which also carries the rocket powerplants and fuel pumps. No streamlined hulls are required for the ships, since they operate in the vacuum of space only Fully tanked, manned, and equipped they weigh 4,370 tons each, almost 99 per cent of which is fuel load. To haul this monstrous mass into the satellite orbit is a task

of fantastic proportions. It requires 360 single flights of three-stage supply rocket ships, at total expense of over two million tons of fuel. Flnally, when two of the three moonships return from the moon-the third is left behind-they will constitute a combined weight of seventy-eight tons.

Five days after blast-off from the satellite orbit the three moonships begin their delicate, automatically controlled landing maneuver on the moon, Resting firmly on the pillar of fire expelled from the exhaust nozzles, they float down gently to an eggshell landing Then the members of the expedition set up camp. One of the moonships is dismantled, and the ingeniously designed parts are used for quarters. Operating from this base the expedition sets out for an extensive program of lunar explorations with the aim of shedding some light on the exterior and interior constitution of the moon, the origin of the bizarre features on its surface, and many other unsolved riddles that surround the nature and origin of the earth's companion. The most ambitious part of the expedition is a ten-day, 500-mile round trip to a larger crater made with the use of two tractors that house the ten members of the crew in airtight compartments. After two hot moon-days and one chilly

The authors, the editor, and the lustrators of this book must be com mended for having rendered a unique service to the idea of space travel

All too willingly the space enthusiast permits himself to be carried away by the inspiring idea of man's imminent conquest of space. In many circles the conquest of the moon is considered only a first, small step leading to more ambitious feats. In "Conquest of the Moon" the authors have presented ample proof that!

hat

space flight is a task of fantastic propoftions. Billlons of dollars, and mil-

lions of man-hours by highly skilled personnel will have to be sunk into the moon project. This is the price we will have to pay, if we intend to fulfill man's age-old desire to set foot on an allen celestial body. It is the price we will have to pay for solving yet unsolved riddles of the moon. Let us hope that the political and economic future of mankind will eventually permit us to afford such singular cultural progress.

terplanetary exploration is well 'illus trated in "Our Neighbor, Worlds," by the British astronomer V. A. Firsoff (Philosophical Library, $8); He might be making plans for drive as he discusses the visit. and the possibility of digging mines to exploit lunar ores "Reaching Mercury, though difficult, is less formidable than is pometimes made out"; "a voyage to Venus is one of the simplest astronautical propositions." It is conCeded that trips to Saturn, Jupiter, and other more distant planets would take years and will not be attempted for a long time to come. Rocket experts may disagree with some of Dr. Firsoff's most optimistic statements. But the facts he presents are taken from authoritative sources, and there is no arguing with his general conclusion: "Astronomy, or at any rate that part of It which deals with the solar system, will be placed on substantially the same footing, as geography."

Mint

By George Abbe

JOHN PTEUTEL

T NIGHT when cool, when cool the good rain comes
and seeks to fall more swiftly, and falls, and returns
A
on the bough of windlessness, and the crickets' chirr
is muted; now, strange like an amiable scarecrow puzzled
by an old charm, the boy on a bicyle passes,
his shirt sweat-drenched, eyes odd, hair frizzled
with swimming and heat; aimless; his bike pedal flicking grasses
that grow tall, leaning, by the crooked wooden fence.
Then, faint, but longed-for and pleasant as arms of a lover,
the spice of meadow.mint enfolds the heart,

frail and ghostly, but 'true as wild bird's hover,
and the boy, not knowing why, feels the throat's gate
break wide with joy, and rising on pedals flings
his weight at distance, and speeds on evening's wings

[PAGE BREAK]

MAN IN SPACE

Wilderness of the Stars

Since World War 11 there has been a revolution in scientific thinking about the possibility of travel to other planes. In the essay that follows, Cornelius Ryan, associate editor of Collier's mag arine and specialist on space-travel, tells what these new ideas are and ap-
praises three recently published books on the subject.

By Cornelius Ryan

viation slowly

TT IS already an accepted fact, shared not only by laymen but also by many distinguished sel-
entists, that in the not too distant future man will venture beyond the atmosphere to brave the inhospitable reaches of space. Once there and safely ensconced in a wheel-like, air-conditioned space
traveling in an orbit around the globe, he can get down to the real business afoot-the exploration of the heavens. Certainly the extraordinary achieve ments in the development of research planes, high-altitude rockets, and the intensive work now underway in the field of space medicine, all seem to be directed toward or at least to imply - that space flight is in the offing. How-ever, it would be wrong to assume that tomorrow's manned rocketship will be developed by accident as it were, or as a by-product perhaps of these various research programs.
day's upper atmosphere research plus a vast stock of physical, psychological, and astronomical information methods have been devised to protect what Dr. Heinz Haber calls the "weakest link in any effort to reach space-man himself" But all of this knowledge

most which is theoretical anyway-
represents only a mere beginning to,
the staggeringly difficult and costly
project of sending man into space,
Regrettably, this fact is rarely em-
phasized in space-flight literature. The
result of this omission and others
equally as serious, and the whole
aided by Hollywood and TV's extra-
terrestrial flights of fancy, have given
the average reader the Impression that
any day now if not already-man
will blast off, for the star-studded
blackness of space.
Dr. Wernher von Braun, perhaps
the foremost authority in the world
today on rocketry and its application
to space travel, has written that "the
conquest of space is as inevitable as
the rising of the sun, but it is a
task of too great magnitude to be a
mere product of some other work...
It requires a well-coordinated pro-
gram extending over a number of
years, each step dovetailing into the
whole pattern" Today's research is
producing only the mortar to hold all
the scientific bricks of tomorrow's
space program together and that is all
True, the technical specifications of
rocketships, space stations, and the
type of vehicles to carry expeditions
from earth satellites to the moon or
Mars have been blueprinted by Von
Braun and others in remarkable de-
tall Sizes weights, speeds, fuel re-
quirements and methods of operation
have all been worked out in the most
painstaking manner. And from to-
Of course, nothing could be further
239,000 miles to the moon, land on that
lonesome body and then, return to
earth, it would have to carry so much
fuel that it would welgh perhaps
900,000 tons and stand as tall as the
Empire State Building!
Over the last ten years specialists
such as Von Braun, Zwicky of Gall-
fornia Institute of Technology, Truax
of the U. S, Navy, and others have
repeatedly pointed out that man's first-
real efforts to reach out of his atmos-

phere will be to establish a robot laboratory in an orbit close to the earth. This will be the first step-a far cry from the huge rocketships of pecudo-scientific space travel literature. Unmanned, but loaded with measuring Instrumenta all hooked up to automatically reporting radio equipment, this "baby space station" will verify and confirm much of the theoretical knowledge now available. Only years later, after much trial and error, will man gingerly venture into space in a rocketship. But the vast majority of books on space travel have so mlaled their readers regarding this sequence of events that one cannot help but wonder if the first tentative steps may not indeed prove anticlimactic!

and the erection of a space station
from the truth. Manned space flight THANKFULLY, however, a small
could be a reality within ten years,
the moon could be reached within
twenty-five to fifty years providing
that an all-out development program
began now. It is this latter consideration which is conveniently forgotten
In so many works on space travel
Of the scores of books which have
appeared on the subject since Warld
War it can be cald that a good
60 per cent have been fanciful,
wildly improbable, and technically
absurd productions, Some authors
have quite casually taken the laws of
physics and, whether through ignorance or deliberate intent, have
twisted them to suit their own convenlence. Others have quite cheerfully sent rocketships soaring through
space at such Incredible speeds that
the unfortunate occupants could not
possibly have survived. And how often
have these pseudo-scientific books included illustrations which were totally
misleading!

One example which comes to
mind, and which seems to crop up in
one form or another in many of
these bfferings, is the drawing of a
tall, alender, bullet-shaped rocketship being readied for a trip to the

moon The reader is rarely told that for such a vehicle to tear away from the earth's gravitational pull, speed number of authoritative books have appeared during the last few years which have to some extent balanced the spate of pseudo-scientific offerings. Besides such first-rate science writers as Britain's A. C. Clark ("The Exploration of Space") and Willy Ley ("Rockets, Missiles, and Space Travel," etc.) among others, a number of scientists have written books on space travel or on allled subjects which are a "must" for those who are: seriously interested in the astronomical, physiological, or engineering aspects of the problems involved. Chlef among these authorities are: Dr. Wernher von Braun, the Army's gulded missiles expert; Sir Harold Spenser Jones, Britain Astronomer Royal; Dr. Fred L. Whipple and Dr. Donald C. Menzel, both of Harvard; Dr. Heinz Haber of UCLA, and Dr. Hubertus Strughold of the Air Force's School of Aviation Medicine.

Two new books from this coterie recently appeared: Dr. Wernher von Braun's "The Mars Project" (Unlversity of Illinois Press, $3.95) and Dr. Hubertus Strughold's "The Green and Red Planet" (University of New Mexico Press, $4)-the former deals with the engineering requirements and mechanical problems relating to a journey to Mara, the latter is a physiological study of the possibility of life on that planet. A third book called "Flight Into Space" (Random House, [AD] $3.50) by Jonathan Norton Leonard, while by no means in the same class as the other two, has recently been published and deserves mention. around the human capacity for withstanding the hardships incident to an interplanetary voyage." Here he is referring to problems such as extended exposure to cosmic rays or the effect of welghtlessness on a human body over the long period of the voyage to and from Mars

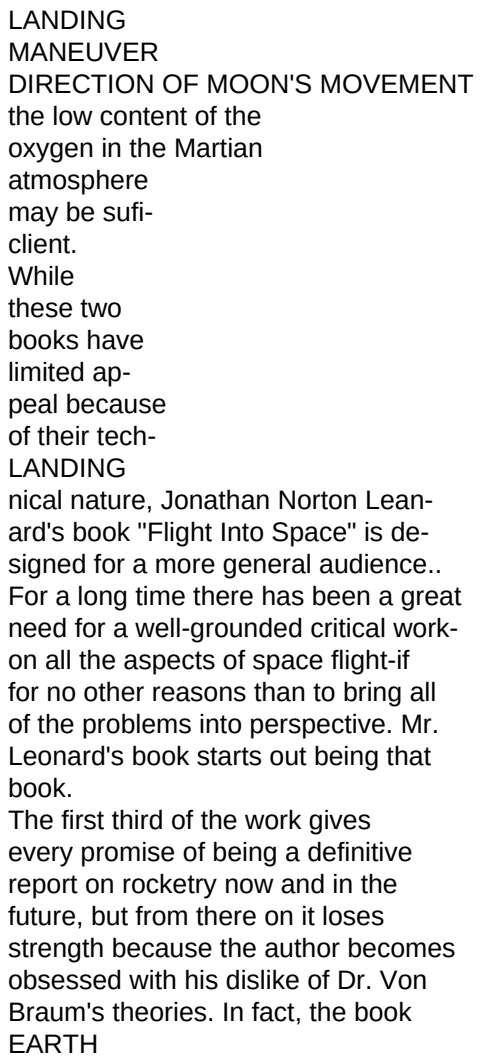
SPACE STATION.
In this alim, but highly-technical book Von Braun takes a long, long look into the future to explore a fascl-nating possibility, but even he would agree that we'll hardly see a Mars expedi-tion set out in our lifetime. It is prob ably a century or more away.
MOON SHP
DEPARTS
Von Braun makes the point very clear from the onset that his Mars pro-posal Is nothing more than a rough outline dealing with some of the prob-lems which an interplanetary trip would entall. But for a "rough out line" it is a very complete work at least from a mechanical standpoint. It includes detalled mathematical data, astronomical and phyaleal tables, tab-ulations of weights, speeds, fuel requirements, and logistical consider-green-skinned men, as science fiction stions. While the book is highly tech-nical because of this, it nevertheless offera to scientists and engineers a point-by-point breakdown of the basic problems involved.
Briefly, Von Braun assumes that an expedition to Mars would have to be on the "grand scale" and that a con-alderable amount of work would have been accomplished, years before any attempt to reach Mars was even con-aldered. In previous works Von Braun has advocated the establishment of a space station 1,075 miles above the earth in a so-called "two hour" orbit -meaning that the station would travel in a north-to-south direction around the globe once every two hours. His Mars plan calls for the eréction of another space station this one traveling in the plane of the equator, in a west-to-east direction.
THE Mars station would be fed with supplies by ferrying rocketships ply-ing between it and Earth. A fleet of ten Mars vehicles would be assembled in space at the Mars station from parts fertied up by the rocketships and the entire flotilla would be capable of

carrying an expedition of seventy men. The costs would be staggering-propellants during the ferrying operations alone amounting to half a billion dollars, yet the "propellants for the actual interplanetary voyage [would be] trifling in comparison, being no more' than three and a half million dollars" The total duration of the expedition would be two years and 239 days, of which time one year and 155 days would be spent in traveling to and from Mars. The actual duration of stay on the planet would be a little over thirteen months.

Von Braun sticks throughout the book to the mechanical aspects only. He does not attempt to answer such problems as astronavigation or the possible hazards of meteoric concentrations between Earth and Mars. Neither does he discuss what he calls the "problem-complex revolving

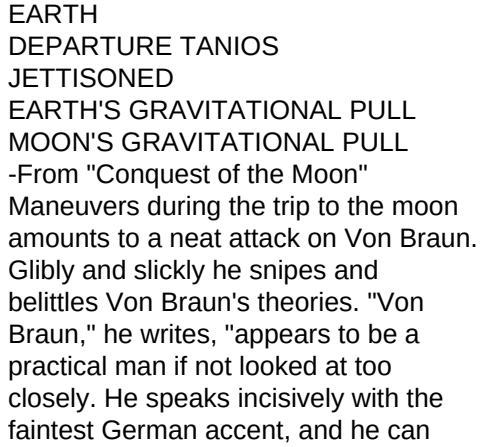
One thing is certain: the first men to land on Mars will not meet little writers so often portray. In "The Green and Red Planet" Dr. Hubertus Strughold concludes that the lack of oxygen on Mars precludes the possibility of "any high order of living things either animal or vegetable." There is neme evidence, Dr. Strughold belleves, fut a primitive type of plant life such as cold resistant lichens, primarily because such plants produce their own oxygen. Also there may be a lowly type of animal existence such as bacteria of some kind. *- This primitive type of animal life needs no sunshine. Instead they gather energy from inorganic matter such as hydrogen, menthane, ammonia, or the like by oxidation. Of course, they also need oxygen, but in this respect

NEUTRAL LINE
SHIP TURNS FOR



the low content of the oxygen in the Martian atmosphere may be sufi-client.

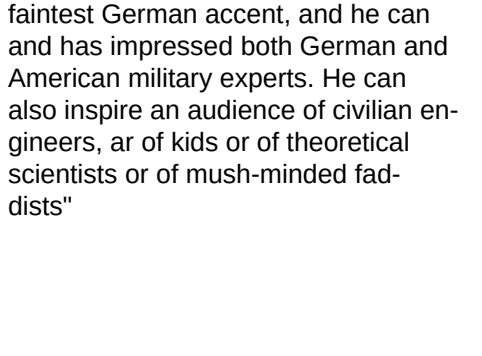
While these two books have limited ap-peal because of their tech-



nical nature, Jonathan Norton Lean-ard's book "Flight Into Space" is de-signed for a more general audience..

For a long time there has been a great need for a well-grounded critical work-on all the aspects of space flight-if for no other reasons than to bring all of the problems into perspective. Mr. Leonard's book starts out being that book.

The first third of the work gives every promise of being a definitive report on rocketry now and in the future, but from there on it loses strength because the author becomes obsessed with his dislike of Dr. Von Braum's theories. In fact, the book



-From "Conquest of the Moon"

Maneuvers during the trip to the moon amounts to a neat attack on Von Braun. Glibly and slickly he snipes and belittles Von Braun's theories. "Von Braun," he writes, "appears to be a practical man if not looked at too closely. He speaks incisively with the faintest German accent, and he can and has impressed both German and American military experts. He can also inspire an audience of civilian en-gineers, ar of kids or of theoretical scientists or of mush-minded fad-dists"

Mr. Leonard, no mush-minded

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globe and voice suspicions. Sumatra, for example, is known to harbor a "new" variety of rhinoceros, in addition to the well known type. Specimens have even been shot, but never under circumstances which permitted a complete scientific investigation.

New Guinea is said to be the home of a large marsupial, and Burma is believed to harbor a variety of deer, black in color and reported to have a strange call curiously resembling the barking of a dog. Even Europe may still boast an undiscovered animal in the Swiss and Austrian Alps, described as a large and very rare lizard.

But the "promised land" for still undiscovered animals is Africa. More precisely, it is the equatorial belt of Africa, stretching roughly 2,000 miles across the continent and extending for about 1,000 miles on either side of the equator. It is the Rainy Forest in that equatorial belt on which suspicion has been focussing for the last 40 years.

It is this territory which still harbors a number of "mystery animals," dimly known to science through incomplete-and not invariably trustworthy-reports. It is this section which has produced four major zoological discoveries within three decades.

The first was the okapi, a short-necked relative of the giraffe. First rumors of its existence reached the civilized world in about 1890 when Sir Henry Stanley, reporting on one of the pygmy tribes of the Congo

region, stated that they had a word
"atti" which meant "donkey".
that such "attis" were occasion.
caught in pits.
To experts this statement "
rather mysterious. No donkey"
known from that section. It m
be one of the zebras, but zeb
avoid forests and those pygm
lived where the forest was den
and most inhospitable.
Sir Harry Johnston decided the
it was either a variety of zeb
which did not mind forest environ
ment, or else an unknown anim
more or less resembling a donke
He set out to investigate
now the books state that "Sir Harr
Johnston discovered the okapi
the Congo forest in 1900.'
.are
At first it was believed to be
new variety of zebra, but when t
complete skins and a skull reache
London, the novel fact of a su
viving short-necked giraffe was
tablished and the Negro name oka
was officially adopted.
The range of the okapi is in the
northeastern corner of the Rain
Forest. This region is called th
Ituri Forest-and the Ituri Fores
the natives said, harbored an enor
mous wild hog, black in color and
as big as a small rhinoceros.
Hunting Africa's Unknown Animals
from the forest bordering
toria Lake.
The animal is now known scien-
lly as "Hylochoerus." While
ctually as large as a small
ceros it is by far the largest of
wild pigs of Africa and its fur is
ally jet-black.
Like the okapi it represents a
otherwise extinct and belong-
to former periods of earth's
tory.
The discovery that there was a
rian variety, seemed to solve
ther old zoological puzzle. In
a Dutchman, Dr. Dapper,

rote a ponderous description of
Liberian coast, and mentioned
ree varieties of wild hogs occur-
there. Two were quite ordinary,
the third was unknown.
Somebody guessed that Dr. Dap-
s mysterious black hog was the
me animal which had been de-
ribed in 1844 by a U.S. physician,
r. Samuel G. Morton. All that
r. Morton had to go by was the
atement that the animal looked
a large pig, but he had a com-
te skull of that animal.
From the skull Dr. Morton es-
blished that the "big pig" was
tually a relative of the hippo-
The ferocious forest hog of the tamus, but of smaller size, "only"
natives remained a riddle for a fu.out six feet long. He called it
quarter of a century. Then it found
its solution, and the solution wa
simple: the animal existed. Capt
R. Meinertzhagen of the British
East African Rifles discovered it
1904, securing an imperfect skin
that had come from the forest of
Mount Kenya. He also obtained
Choeropsis"; popular books re-
rred to it as "pygmy hippo," it
as believed that the animal was
xtinct.
But rumors about "large pigs"
pt coming from Liberia. Some
viously referred to Hylochoerus,
hers sounded much more like

Chocropsis. But Choeropsis was
extinct!
About 1909 the rumors became
too plentiful and Carl Hagenbeck
in Germany finally sent his best
man, Hans Schomburgk, to Liberia
in order to find the real reason for
all this talk.
Something was to be discovered
there, either the "extinct" Chocropi
or else something entirely new.
Every educated Liberian, colored
or white, was fully convinced that
Choeropsis was extinct. And the
natives of the interior believed
Schomburgk crazy, not because he

was looking for this animal which they knew well, but because he wanted it alive. One could, with luck and sharp weapons, kill a "nigbve" (as they called it) but one could not catch it alive.
But one year later Schomburgk brought live pygmy hippos back with him.
While Schomburgk was going after Choeropsis, an expedition of the New York Zoological society, consisting mainly of Herbert Lang and Dr. James P. Chapin, was trying to get a live okapi for the Bronx Park zoo.
Though they were unsuccessful, all unknowingly they discovered a new bird. They brought native headdresses back with them and examination at home showed that one of the headdresses contained feathers of unknown origin.
For more than 20 years, Dr Chapin was haunted by the mystery of these unidentifiable feathers. A chance discovery in a Belgian

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museum in 1936, consisting of an examination of two wrongly labelled stuffed birds, furnished a clue. These unidentifiable feathers had come from an African peacock (later called "Afropavo congensis"), a so far completely unknown bird. All that remained to be done was to verify its actual habitat.
Dr. Chapin did this by flying to Stanleyville. Afropavo turned out to be well known to native hunters. It has a fairly restricted habitat, but is not excessively rare where it occurs. The habitat is, one is tempted to write "of course," the eastern edge of the Rainy Forest from the Ituri Forest down to the Sankuru river.
Even if there were no rumors left

it would be an obvious question to ask whether the Rainy Forest might not harbor more unknown creatures. The rumors say that it does, and a good number of them look fairly substantial. Hans Schomburgk gathered quite a number of them when he was looking for Choeropsis and told me about them one night in Berlin, about a dozen years ago.

While asking questions about "large pigs," with the purpose of locating the haunts of the pygmy hippo, he fell in again and again with reports of a small mountain rhinoceros.

Now Schomburgk knew about Meinertzhagen's forest hog and that it had been termed "a small rhinoceros.

He also knew that a native, trying to be polite, will unhesitatingly affirm that there is, in Sch
burgk's words, "a large animal w
seven horns but only one eve
blue fur" if the interrogator sho
inclinations to be told about s
an animal.

So Schomburgk said, oh
yes,
proceeded to describe the for
hog. To his great surprise the
tive hunters contradicted vic
ously and told him in what respe
the "mountain rhinoceros" differ
from the black pig.

It was evident that the native
hunters knew what they were ta
ing about. Schomburgk came to
conclusion that the mountains
eastern Liberia actually harbor
small-size form of the rhinocer
But so far the small "mounta
rhino" has not been discovered.

Other rumors of the Rainy F
est deal with a cat the size of
leopard but of different habits,
animal called "too"
which is d
scribed as goat-sized and black: a
the so-called nandi bear, a bea

like animal which is said to be
forest dweller and a night prow!
Various settlers have report
that this animal was occasional
killed by poisoned meat put out for
hyenas, even photographs are said
to have been taken, but so far the
"nandi bear" has never been tracked
down by a naturalist.
But the prize story of all the st
ies of unknown animals of equator
Africa is that of the "dragon of th
Congo Forest," the animal "me
kele-mbembe" of the natives.
Though it seems much more fa
tastic at first glance than any of the
Hunting Africa's Unknown Animals
other reports, it is actually one of
the best documented. These other
undiscovered animals are, after all,
strange only because they are not
et known to science.
But the animal "mokele-
mbembe" is described as a living
dinosaur!
It is probably not a dinosaur in
he zoological sense, but it is, in all
probability, a large reptile. Schom-
urgk carried one of the tales about
such an animal.
When he came to Lake Bang-
weolo, outside the limits of the
Rainy Forest proper, he was sur-
prised that hippopotami were lack-
ng, although the lake was just
such a body of water which would
harbor hippopotami.
The natives had an explanation.
The lake did not have hippopotami
because it was inhabited by an ani-
mal which, although somewhat
smaller in size, killed them.
There was also an old, old pic-
Ture which could be taken to con-
tribute evidence. That picture came
from the Ishtar Gate of Babylon,
erected, according to archaeo-
logical findings, by King Nebuchad-
nezzar.
To express the splendor of the
great king, colored bas-reliefs of
animals were imbedded into the

walls, a long row of majestically walking lions along the procession way, and alternating rows of "rimi and sirrushu'
The "rimi"
on the gate itself.
are wild oxen. The
sirrushu" are the "dragons" of Babylon.
The question now arises whether

the sirrush is a mythical monster or whether the Babylonians pictured an animal with which they were familiar and we are not. Offhand it would seem strange that they should place a mythical monster between two existing animals -the lions and "rimi."
I think that, purely from the point of view of logic, the chances are even that the sirrush is the picture of an actually existing animal too. This assumption does not imply that this animal was frequent or even that it occurred near Babylon. On the contrary, it may have been given its place of honor just because it was a "strange beast from far lands.'
In build the sirrush is strongly reminiscent of certain extinct dinosaurs, with a long neck, with forefeet resembling the paws of a mammal and hind feet looking like those of a bird.
It has a forked tongue like snakes and monitor lizards and apparently some flaps of skinny membrane at the head, very much like certain chameleons and other types of living reptiles.
It is described as having a long and muscular tail like an alligator. In size it is said to be intermediate between hippopotamus and elephant.
And there can be little doubt that Central Africa still harbors a large long-necked animal of some kind which shows a definite preference for an aquatic environment and

which is, in all probability, a large
reptile.

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Speaking of BOOKS
About myths and eccentrics-plus some tips
on those youngsters now flocking back to school.
By JOHN T. FREDERICK
E/CIENCE fiction is nothing new in
It isn't merely a matter of
tature.
ang back to such early books of H. G.
Fells as The Food of the Gods or The
ime Machine. Nor to those of Jules
Arne in which such modern common-
aces as the submarine, radio, and ra-
far were projected as romantic possibil-
ales. Science fiction is far older than
at its beginnings go back, indeed,
dese to the very beginnings of literary
Apression.
The essence of science fiction is hu-
Han adventure in places or times not
ually known by human beings; hence
e adventure is imaginative, and the
perience is not susceptible of check-
ng against ascertained fact. To the
iters of ancient times, great portions
the earth's surface were, in effect,
As remote as Mars. The human capacity
perhaps it is a need-to be entertained
imaginative adventure.seems to be
old as the race. Hence, we have ali
through literature the story of imagina-
re adventure, usually posing as a trav-
er's tale and partially based on fact
hearsay. That these yarns related
ventures purporting to have occurred
our own planet doesn't make them
ess kin to the stories of space ships
and interplanetary war which so many
aders enjoy today.
It is appropriate that Willy Ley, a
Well-known authority on rockets and
guided missiles, should have thought of
Purveying the long history of writing
this kind. He has done so very pleas-
antly, with L. Sprague de Camp as co-
thor, in Lands Beyond, An earlier
took of Ley's, The Lungfish, the Dodo.
nd the Unicorn, was a delight. The

present book is much like it. Here is the record of man's imaginings of the imiverse, for always, as today, there ave been the "lands beyond" and those ible and willing to tell about them. To me the most interesting chapter in the ook is that on "The Shape of the Earth." At least by the time of Plato. the authors show, men of science knew that the earth was spherical. Yet as ecently as within the present century

A caricature of
Wilkie Collins,
colorful 19th
Century writer.

R
Kenneth Robinson,
author of the new
Collins biography.

the belief that the earth was flat was stoutly argued by Wilbur Glenn Voliva, of Zion fame, and his adherents; and this is still the view held by some primitive tribes.

Other theories described in this book are those of a pyramidal earth, a saucer-shaped earth, and an earth in parallel layers. One of the more ancient (and more astounding) theories is that of the earth as a hollow sphere, with openings at the poles, habitable and inhabited inside as well as outside. This view was stridently and persistently maintained in 1818 and the decades following by one Captain John Cleves Symmes. an American who announced the theory as an original discovery, though it had been propounded long before his time. Ley and de Camp write very entertainingly of Symmes and the rather respectful attention he received, but do not note the fact that one of the mas terpieces of American imaginative literature. The Narrative of Arthur Gor don Pym, by Edgar Allan Poe (his only work of fiction of book length), seemingly is based on an adaptation of Symmes' theory.

The Ley-de Camp style is piquant. I quote almost at random:

The Magnetic Mountain also

plays a part in the European Virgil-legend cycle. . . . These medieval legends transformed the gentle poet of Mantua into a mighty wizard who built Naples on a foundation of eggs and who kidnapped the daughter of the Sultan of Egypt by riding across the Mediterranean on a bridge of "immobile air" which he created by means of his spells. He also made a brazen talismanic fly which kept all flies out of Naples, a bronze archer which kept Vesuvius in check by threatening it drawn bow, medicinal
with a
baths to cure all diseases, an aqueduct to take wine from Naples to Rome, and many other wonders.
If we stop to think, aren't some of these details a bit suggestive of some of those in the science fiction of today? Lands Beyond gives impressive evidence of the power of the human imagination-and of the extent of human credulity. It may send you hunting for neglected masterpieces in its field-for example, Sir Arthur Conan Doyle's The Lost World. and Nicholas Klim. by Ludvig Baron von Holberg, an 18th Century narrative little known in Eng. lish-speaking countries, but popular to this day among Scandinavian readers. Lands Beyond is very good reading.
If you are a mystery-story fan, probably you have read those great early examples of the form: The Woman in White and The Moonstone, by Wilkie Collins. If you haven't, don't postpone the pleasure. You have never read a blography of the eccentric artist who was their author, however, unless very recently, for Wilkie Collins, by Kenneth Robinson, is the first real biography of one of the most interesting of 19th Century British men of letters. The author was a British insurance broker, later a lieutenant commander in the Royal Navy, and still later a member of Parliament, who became interested In Coilins. recognized the need for a good

biography "I began to wonder what
kind of man he was," he says-and has
written an admirable one.
Perhaps the richest vein in this book
of many pleasures is that which fol-
The Rotarian Val LXXXI # 3
Lands
Beyond
AMD
Lands
Beyond
Lands and persons that never were-
from Atlantis to El Dorado-are the
theme of this book by de Camp and Ley.
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SEPTEMBER 1958
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Getting around on other planets won't be nearly as
hard as getting to them-but it won't be easy, either
Fantastic Cars for Other Planets
by Willy Ley
Condensed from Galaxy Science Fiction
HE YEAR will be around 1985 A.D.
I Capt. Sixtus E. Boyle, assisted
by navigator Roderich Meerschaum,
has just put his ship down on Mars.
Before landing, they had orbited
Mars for several days in order to
take detailed pictures of the surface
in the equatorial regions so that they
could decide on a suitable spot for
landing. Their general instructions
had been somewhat vague about the
landing itself - merely stating that
the landing should be made near the
Martian equator for reasons of tem-
peratures.
Near the equator, one could ex-
pect reasonable temperatures during
the day. The nights would be ex-
tremely cold, but far from the equa-
tor it would be cold around the clock.
Galaxy Science Fiction (Aug '58), 421 Hudson
St., New York 14, N. Y. Copyright 1958 by Galaxy
Publishing Corp.

In addition to the order to land near the equator, the instructions merely said that the landing place should be "in the proximity of interesting formations." Capt. Boyle finally found a spot on the photographs which looked like smooth desert with a ridge of fairly high hills (rare on Mars) not too far away. There is also a "canal" nearby. Now the ship sits on the desert sand, undamaged. The ridge of hills is to the north and looks as if it were about 5 miles away. And the "canal," or whatever it really is, must be to the east. It is not visible from the ship, but if they hit anywhere near the intended spot, it would be about 20 miles away.

The captain decides that one does not explore well on an empty stomach, so the crew eats first. There is a

rest period of several hours, then the captain assigns watches and two men break out the ground car.

Now let's come back from the future and think about that ground car for Mars. How would you design ground transportation for such different conditions?

But the first question might well be whether you really need a ground car. What's wrong with walking?

Of course one could walk on Mars. As has been mentioned, the daytime temperatures near the

the low gravity-man will weigh precisely 38 percent of what he' weighs on earth. Which means that even a heavy suit, with oxygen bottles on the back and all kinds of hand tools dangling from the belt, will not produce full earth weight for the explorer.

So one could walk, and the men will do it for short distances. But, for exploration, ground transporta-

tion of some kind is needed.
The design of any kind of ground
•Sober reflection quickly
indicates .. that we still
are in the model-T age of
jets, nuclear power, space
missiles, and interplanetary
exploration.
transportation is chiefly
influenced by the na-
ture of the ground. On
Mars, there may be
rocky ground in many
places. Much of it must
be sandy desert. And in
those areas which look
dark when seen from
the earth, there are likely to be salty
marshes. For all these types of
ground, wheels are not practical.
-Walter J. Murphy
Martian equator are
bearable, even if highly
extreme. In the morn-
ing, say, one hour after
sunrise, it is still about
90 below zero Fahren-
heit. An hour after noon, it is around
70 above zero. The tropics of Mars
might better be called its "intem-
perate zone," but they do not repre-
sent an impossible situation. Our
own highland of Tibet is very nearly
as bad; the temperature does not go
as low during the night, but it climbs
to around 100° F. in daytime when
the season is right.
Air pressure is a somewhat differ-
ent story. The Martian atmosphere,
near the ground, has roughly the
same pressure as our own atmosphere
11 miles up. This calls for a pressure
suit, especially since the oxygen con-
tent seems to be near zero. Even if
it were all oxygen, a man could not
breathe at such a low pressure.
The inconvenience of the pressure
suit is more than compensated by
The first alternative that always
occurs to everybody is the cater-
pillar tread. But it has its limita-
tions too, and for Mars the best

bet is the so-called "rolligon" - the barrel-shaped inflated pillows developed for similar conditions on the earth.

Rolligons produce fine traction on sand and do not sink in. They can tolerate very rough rocky ground and don't shake up the driver in the process. They do well in marshes, and if the water should be too deep, they will float. They could be inflated on the spot with Martian atmosphere. It would take some time because the Martian atmosphere is 1954 110 4#3

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so thin, but it can be compressed.

The question of engine power is somewhat more complicated. It must not need air, for we have to go on the assumption that Martian air will not sustain combustion, even when compressed to what we consider normal density. Right now we know three types of non-air-breathing engines. They are (1) the rocket, (2) the electric motor, and (3) the atomic reactor.

Rocket power is useless for the conditions in question, because the ground vehicles must be able to move very slowly, which is the one thing the rocket cannot do, at least not efficiently.

The electric motor could provide almost any speed range desired, but it needs electric current. Of course, one might say that between 1958 and 1985 somebody may invent an incredibly efficient kind of storage battery. This is possible, but nobody can promise that somebody else will. Maybe an atomic reactor can be. built small enough and light enough, in time, but it would be hard to say when, and impossible to tell what other complications might go with a small reactor.

It was pointed out several years ago-by Wernher von Braun-that a ground car for an airless planet or a planet with oxygenless atmosphere could be turbine-powered, provided you pick the right fuel for the turbine. The right fuel would be hydrogen peroxide, H_2O_2.

At ordinary temperatures, hydrogen peroxide is a liquid and it is quite safe if it does not contain any other

impurities than water. When hydrogen peroxide is decomposed, the reaction produces water and free oxygen. It also produces a large amount of heat. Hence the water appears in the form of steam, so that the product is a mixture of steam and hot oxygen. This steam can turn a turbine wheel.

After it has passed through the turbine wheel, the steam-oxygen mixture enters a combustion chamber where some ordinary fuel like gasoline is injected. After it has burned, there is now a mixture of hot carbon dioxide from the combustion and reheated steam. This can drive a second turbine wheel.

You have here what is known as a two-stage turbine which is not air-breathing, hence the ideal power-plant for ground vehicles on airless or oxygenless planets.

But by the time an expedition sets out for Mars, there will be an establishment of some sort on the moon. Conditions on the surface of the moon are like those on Mars, with much exaggeration.

Where Mars has a thin atmosphere, the moon has just traces of gases: argon and so forth. Where Mars cools off to an estimated 70 degrees below zero during the night, the moon cools to an estimated 200 degrees below zero during its night; if a night lasts two weeks, earth time, the surface obviously has a better: chance to radiate what heat it has. into space. Likewise, the two-week;

day produces higher temperatures as it wears on slowly.

Near the moon's equator, the tem

perature of the surface rock climbs to beyond the boiling point of water after a week of sunshine.

As for the condition of the lunar surface, one can only say that it is not earthlike. The old ideas about the rock cracking into splinters because of the large temperature span between day and night have been abandoned. Laboratory experiments have shown that rock will not crack if heated and cooled as slowly as in the course of a full lunar day.

But the rock is being pounded by meteorites of all sizes. Meteorites of a size that form craters visible from earth are naturally rare. But cosmic dust grains are very frequent. Each dust grain hitting lunar rock will produce several other dust grains. The cosmic rays also join in this work; they can, and in time will, break up the crystalline structure of the rock.

The overall result of these forces, acting over several million years of time, must be sharp rocks on the one hand and a layer of dust on the other. On an exposed vertical rock surface, the formation of dust must be continuous, since the rock flakes and dust produced will simply fall off and settle on the ground. On a flat area, however, the process must be self-limiting, because the dust formed will protect the rock underneath against further meteorite and cosmic-ray impacts.

The question is when does the dust itself become protection? In the case of tiny meteorites the size of sand grains, half an inch of dust will obviously be enough; the force of a new

BLUE
ROLLIGON MARS CAR, in an artist's conception. Vehicle, it is predicted by designers, will

be driven by a hydrogen peroxide turbine. impact will not be carried through such a layer. Cosmic rays could easily penetrate a half-inch layer of dust, however, and continue destroying the rock. But this process must be self-limiting too, except that the required dust layer would have to be thicker.

The consensus right now is that the average depth of a dust layer might be about an inch, but that in some places a much deeper accumulation is easily possible. If dust is fine enough, it will behave more or less like water, and the English astronomer Thomas Gold-now in the United States-has suggested that the smoothness of the moon's maria is due to such a dust accumulation; the maria might be just large depressions filled with dust.

The lunar surface, then, must be rocky with a dust layer on top, with possible accumulations of dust of great depth.

The two-stage hydrogen peroxide turbine would work on the moon too; the problem is what shape to give to the car. Most people who have

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thought about this problem have simply settled for a tank as the most likely shape. Caterpillar treads can negotiate any kind of ground except ground that is very soft. They do not slip easily on gravel and can take considerable inclines.

But so can rolligons, and if there are such dust-filled depressions, the rolligons would be safer. If a tank shape is picked, it might be practical to have a tank push an ordinary heavy wheel ahead of itself on a boom. This would show where the ground is treacherous.

Another likely shape for a moon car would be a vehicle which simply

has four very large wheels, at least 15 feet in diameter, with spiked rims. Such a vehicle could make much better speed on flat ground, and because of the large size of the wheels, there would be a high clearance between the body of the car and the ground, which would permit the passing of obstacles where a tank would have to lurch and clamber.

It is very likely that every moon car would have to carry a sheet-metal "shield" on vertical booms above its body.

This shield would, in the first place, be a protection against too much sunlight. Since the moon lacks anything that could reasonably be called an atmosphere, the sunlight beating down on the lunar plains will be about three times as powerful as the tropical sun on a clear day on earth.

In the second place, the shield would protect the body of the car against the fairly frequent dust par-

ticles coming from space with an average velocity of 40 miles per second. They would cover the shield with nearly microscopic pits in the course of time, but they would not penetrate.

But if there is a permanent base of some kind on the moon, electricity would be a possible source of power for the moon cars in the vicinity of the base. The base would have an atomic reactor, a stationary powerplant, for its own needs. Ground cars staying close to the base could run on rechargeable batteries.

The problem is that rechargeable batteries must not be exposed to a vacuum; they have to be pressurized -that is, they must be located in the interior of the moon car. This might be inconvenient, to say the least, and the designers therefore are likely to fall back on a trick used in Switzerland a few years ago.

Engineers of the Swiss firm of Oer-

likon, at Oerlikon, near Zürich, built an experimental bus with a capacity of two dozen passengers. The wheels of this bus were driven by an ordinary 3-phase electric motor, but the current for the motor was not supplied by either overhead wire or by batteries. The energy was stored in a 1-ton flywheel, measuring 6 feet in diameter and mounted in a horizontal position under the floor of the bus.

To reduce friction, the Swiss engineers ran the flywheel in a sealed casing in a hydrogen atmosphere, but this is a minor point.

A second motor was mounted on the flywheel shaft, and at the terminal, this motor brought the flywheel up to 3,000 revolutions per minute, drawing current from the net. When disconnected from the net, this motor became the generator, drawing mechanical energy from the flywheel and supplying electric current to the drive motor.

After 6 miles of stop-and-go driving with a full passenger load, the flywheel had run down to 1,500 revolutions per minute. It then needed recharging, which could be done by means of power outlets near passenger stops. The recharging took 2 minutes. Then the bus was ready for another 6-mile run.

With a stationary powerplant for the moon base, such flywheel-driven vehicles would be very practical for routine runs on the lunar surface. If there are a number of routine stops-say, lunar base, spaceport, astronomical observatory and so forth-cables could be laid to those points from the powerplant, with intermediate recharging points where necessary.

The problem of getting around on other planets resembles quite a num-

ber of other detail problems in space travel. Engineers have very definite ideas of how these problems could be solved. They could even build their solutions right now.

But these solutions are not needed here on earth. They are needed at the other end of the trip.

And the first problem is to get to the other end of the trip.

L

Plants Pick Up Radioactive Fallout

EVIDENCE that certain plants pick up radioactive fallout "to an extraordinary degree" comes from an English scientist. The plants are those having a low mineral intake and growing on extremely acid soils. One such plant is the bog moss Sphagnum papillosum according to Dr. Eville Gorham of Ambleside, Westmorland. England. His studies on radioactive fallout accumulation are reported in the British scientific journal, Nature.

Strontium-90, since it is taken up by the bones in the body as calcium is, is believed to be the most deadly product for humans in radioactive fallout. Dr. Gorham reported that the high concentration of strontium-90 in the bones of upland sheep may be due partly to the animals' reliance on mosses for fodder, particularly in hard times.

The high radioactivity of plants growing on acid soils. Dr. Gorham said. is due to the fact that radioactive fallout accounts for a greater proportion of the soluble or adsorbed chemicals available to the vegetation. The radioactivity of such plants has increased as much as 50-fold in the past 10 years. he found by comparing specimens collected in 1958 with others collected prior to 1947.

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MYSTERY OF THE TINY PLANETS)
by Willy Ley
Condensed from Galaxy Science Fiction
HIS YEAR marks the 60th anni-
T
versary of an important astro-
nomical discovery which, however,
did not then take place. Now this
might sound confusing, so let me re-
phrase it by saying that 60 years
have gone by since an important as-
tronomical discovery could have been
made.
If that is still not quite clear, it has
to be said more bluntly by stating
that Harvard College Observatory
missed something important 60 years
ago. Two years later, the astron-
omers at Arequipa, Peru, missed the
same chance of amassing some fame.
They both photographed Planetoid
No. 433 and did not realize what it
was that showed on their plates.
Of course, it is conceivable that
they may have been somewhat tired
of planetoids (or asteroids) by that
time. The first one of that swarm of
diminutive planets between the or-
bits of Mars and Jupiter had shown
up during the night preceding Janu-
ary 1, 1801. Professor Giuseppe
Piazzi, trying to correct a typograph-
ical error in a recently published
catalogue of fixed stars, had noticed
a faint star where there should be
none at all. Further observation and
a calculation of the orbit by Karl
Galaxy Science Fiction (Nov. '54), 421 Hudson
St., New York 14, N. Y. Copyright 1954.

wo years later, Mr. Hencke in-
rmed the world that he had found
No. 6, Hebe.
Then others went to work. When
he 50th anniversary of the discov-
ry of Ceres came around, No. 14,
amed Irene, had just been identi-
ed.

Friedrich Gauss established that i So far, the joy of discovery had
was not a comet, as suspected at first ot been tarnished, but then it began
but a small planet.
be dimmed by sheer numbers. In
It was named Ceres and we nov870, the number of known and
know that it is the largest membeamed planetoids had grown to 110.
of the Asteroid Belt, with a diamn 1890, it had increased to 300.
It was then that a Dr. Isaac Rob-
eter of 480 miles.
In the late evening hours of Marchts made a fateful suggestion. One
18, 1802, an amateur astronomerould keep track of these little bodies
Wilhelm Catthaus Olbers, M.D. oest by means of the photographic
Bremen, found a second such plane late, he said. Astronomers previ-
while on the lookout for comets. Iusly had checked the actual appear-
was called Pallas and turned out tince of the sky, along the band where
be the second largest, with a diame planetoids had to be, against star
eter of just a trifle over 300 miles aps. Anything that showed in the
The same Dr. Olbers discovered onelescope but could not be found on
more, Vesta, in 1807, but Vesta wahe chart had to be either a comet
already No. 4 for Harding had fountr a planetoid. It would be simpler,
Dr. Roberts said, to photograph
No. 3, Juno, in 1804.
I haven't been able to discover yehese areas, following the apparent
- indubitablyovement of the fixed stars with the
just why Dr. Olbers-
the expert in this field, with two disistrument. The stars would then
coveries out of a total of four-behow up as points, while things that
comets and planetoids.
lieved and convinced others thanoved
there were only four planetoids. Alould show as short lines.
most a score of years passed unti Professor Max Wolf of Heidelberg
somebody decided to see whether as the first to adopt this suggestion.
The results were simply disastrous.
there mightn't be more.
This skeptical character was, likes, you could check on known
Dr. Olbers, an amateur, one Mr. Mlanetoids in that manner-but you
Hencke of Driesen in Germany ould not avoid discovering dozens
After fifteen years of search, he wasf new ones at the same time.
able to announce the discovery of Within the four years from 1891
No. 5, Astraea, thirty-eight years, 1895, no less than 107 new as-
after the discovery of No. 4, Vesta eroids were discovered! At the turn

of the century, the total number was
559, of which 452 had been num-
bered and named! Professor Wolf
and his assistants had added more
than a hundred to the 300 known in
1890. Prof. Charlois of Nice had
added around 95, and Prof. Palisa
of Vienna 83! C. H. F. Peters had
found 52 or 53 and many others
could boast half a dozen.

Naturally, there were countless duplications. The job of identifying the short lines on countless plates alone assumed almost superhuman proportions.

A rather fast-growing group of astronomers decided that all this was more or less wasted effort and skipped reports on Kleine Planeten when reading their professional journals. In this general atmosphere of "too much news, "there came the evening of August 13, 1898.

The place was the Urania Observatory in Berlin. It had been planned to be "quite some distance" from the city so that the work of the astronomers should not be hampered by city lights. But by 1898, the city was already encroaching on it. By the time of the First World War, when I was old enough to pay attention to such things, the Urania Observatory was deep inside the city and was used for instruction and popular lectures only.

In 1898, the Urania Observatory boasted the biggest telescope-a 12-incher-in all Prussia and the chief astronomer, Dr. G. Witt, had installed some photographic equipment. He must have been short of funds, for the little box that housed

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we can say is that Eros, if dumped on Earth without shattering, would merely become our highest mountain.

Eros rotates around its axis and, while doing so, its brightness changes. This leads to the suspicion that it is not spherical, but of irregular shape.

In 1937, several astronomers published their observations and the conclusion they drew was that Eros might have a shape like a poorly formed brick. Assuming a density of

1.63 times that of water, they calculated that the longest axis of this "brick" was 21.5 miles and that the two shorter axes measured 13.0 and 10.1 miles. The shortest axis is the axis of rotation and the period of rotation was given as five hours an 16 minutes.

All this is still subject to corre tion and the figures may chang somewhat, but it can be taken fo granted that Eros has an irregula shape that would be impossible fo a body of much larger size. It is ver simply a huge mountain circling th Sun.

science milestone

by Leonard Engel

Na rainy afternoon in April, I may add here that its co-disco 1921, a tall, somber young man erer, Linke, has offered the sugges med the nose of his battered Ford tion that Eros may not be a sing the highway from London, On- body, but several small ones rotatino, to Toronto, a hundred miles around their common center of gray. Behind him lay darkness; ity. It's possible, but not established ad-perhaps more darkness. At any event, planetoid No. 43 dis medical practice had been a constitutes one of the strangest an ure. His childhood sweetheart most intriguing astronomical discow grown tired of waiting for him eries ever made.

ough medical school, through rld War I army service, through unavailing struggle to establish self as the first orthopedic sur- n in Western Ontario, and had arned his ring. He had given up bon dioxide, the California plant phys part-time teaching jobs that had hydrates manufactured by the chlor ologists measured the amount of carbot him alive, and had sold his

Step Nearer to Photosynthesis Secret

Scientists are a step closer to under- standing photosynthesis, thanks to a California-developed method of extract- leaves.

ing tiny "light converters" in plant plasts in the photosynthetic process.se. And for what? To go to the And they noticed something else waversity of Toronto to perform an going on: Chloroplasts were convertinperiment which had been per- light energy directly into chemical et med many times before by emi- ergy, stored in ATP-the same comat physiologists-and always un-

pound we use every time we flex outcessfully.
Three University of California researchers now have a method of separating and keeping alive these "converters," called chloroplasts. They have observed the first complete photosynthesis in the isolated units, and they have discovered a new process, heretofore unknown to science, by which plants convert light directly into chemical energy.
Doctor Daniel I. Arnon, professor of plant physiology, has told how he and two colleagues devised a way of breaking down plant cells without harming the chloroplasts. Using radioactive carmuscles. Man, however, obtains But this unknown young man was ATP from food, while plants make succeed where the others had with light.
ed. This was Frederick Grant
Doctor Arnon and his colleagues-
Dr. M. B. Allen and Dr. F. R. Whatleting. Before the summer was
-believe their findings will help over Banting and Charles Herbert come one of the obstacles makin st, a Toronto graduate student studies of photosynthesis difficult-tho gave up a desperately needed fact that heretofore it has been impo amer job to help Banting, would sible to take chloroplasts out of leave cover insulin. From the pancreas without stopping photosynthesis. a dog, Banting and Best would
Banting and Best
Discoverers of Insulin
extract the elusive hormone without which sugar piles up in the blood, while the tissues starve; the elusive hormone without which comes the slow, terrible death of diabetes.
Banting's trip was one of the most fruitful in the history of science.
Frederick Banting was born on November 14, 1891, on a farm near Alliston, a pioneer town 40 miles northwest of Toronto. He was the youngest of four boys and a girl in the family of William Banting, whose father had carved the farm out of the Ontario wilderness, and Sarah Grant Banting, the first white girl born in Alliston.
By the time Frederick was born, the Bantings were comparatively prosperous, so Frederick was able to go through high school and then on to college. In college, his mother

and father, who were devoted members of the local Methodist Church, expected him to prepare for the ministry. So did his sweetheart, the minister's daughter.
After a few months at a Methodist college in Toronto, however, Banting realized that medicine was his field.
Banting entered the University of Toronto Medical School in 1912 with a class whose training was first interrupted by World War I, and

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the small electric lamp illuminating the spider-web crosshairs had been made by the scientific staff out of a cigar box.
A more serious worry of Dr. Witt was that he did not trust the clockwork mechanism that guided the telescope. This can be corrected manually if somebody sees to it that a fixed star, picked for the purpose, does not leave its assigned place in the field of an auxiliary instrument. This job was done by a young student by the name of Felix Linke. Linke told me later that there happened to be a heat wave at the time and that they were happy if there was a reason to go to the photographic darkroom, which was the coolest place in the whole observatory, but that the word "cool" plied only by comparison with the rest.
ap-
The program decided upon by Dr. Witt for the night of August 13 to 14 was to track down No. 185, Eunike. Eunike had not been seen for years. But if the old orbit calculation still held true, Eunike should be in the general vicinity of the fixed star beta of the constella-

tion Aquarius.
The photographic instrument was pointed in the proper direction and Linke held it as steady as he could for two hours. Then Dr. Witt and his helper rushed the new plate to the "cool" darkroom and, after it had been racked up to dry, they went home to get as much sleep as the heat would permit. Next day, they went over the plate with a magnifying glass for planetoid tracks.
December:54
Mystery of the Tiny Planets
Eunike was where she was sup. Doctor Witt selected Eros.
posed to be, or very nearly so. An The orbit computed by Dr. Ber-
other known planetoid had also leferich showed that the point closest
its visiting card. But near the stan the Sun, the perihelion, is only
beta Aquarii, there was another track 13 times the earth's average dis-
of unusual length. Dr. Witt though ince from the Sun. The point of
at first that this was no track, bu arth's orbit closest to the perihelion
a flaw in the plate. Then he decider Eros is passed by Earth every
that it was a genuine track and, beanuary 22nd. If it happened that
cause of its unusual length, it had trros passed its perihelion on that
be made by a fast-moving body., I'ate, or close to it, the distance
could still be a comet, however..arth-to-Eros would
In the evening, the 12-incher went a mere 14 million
into action for direct observation iles.
The tiny "star" that had made the This was consider-
track the night before could be clearly closer than any-
ly seen. It was not a comet. Henching else known at
it had to be another new planetoid at time (not counting
as a
79
it turned out that Harvard College Observatory had Eros on seventeen plates exposed at that time. And Arequipa had photographed it four times in 1896.
The next really close approach of Eros was not due until 1931, but for another one as good as the missed one in 1894, one must wait until Eros has completed 46 of its revolutions. This means 81 years, so that Eros will be a minimum distance again in 1975.
While the telescope serves means of penetrating space, and of bringing its remotest regions nearer us, mathematics, by inductive

reasoning, has led us
wards to the remotest re-
gions of heaven, and brought
a portion of them within
the range of our possibilities.
The customary wires to other obe Moon) because the
servatories were sent and quite a loosest Venus can come
of observations accumulated during 20 million miles and
the next six days. Then Dr. Bere closest approach of
berich, the chief of the Computinglars is 35 million miles.
Institute, which had been founder At the time of the actual discovery
especially for keeping track of thy Dr. Witt, Eros had been near its
minor planets, retired with all the helion and the question was—how
observations of Object 1898 DQ anting one would have to wait to get
began to compute its orbit.
close look?
It turned out to be the most un Eros needed 643 days to go from
usual orbit of any planetoid thus farerihelion to perihelion. It followed
Most of it was between the orbit at Eros and Earth would be in the
of Earth and Mars. And its aver me direction, as seen from the Sun,
age distance from the Sun was small, proximately every two years and
er than that of any other.
ur months.
It was for these reasons that Dr But this still implies greatly vary-
Witt insisted that 1898 DQ, or planeg distances. When had Eros been
toid No. 433, should be given a name its perihelion, on or about January
which, by itself, emphasized that ind, any year? The answer was
was a special case. Starting with isappointing: it had been in Janu-
Ceres, Pallas, Juno and Vesta, aly 1894, four and a half years be-
planetoids had been given femalere it was discovered.
names, preferably classical. The new When that date was established, a
one was to receive a male name. arch of old plates was made and
03-
-Humbolt
But in the meantime,
astronomers have put
Eros to good use even
with somewhat inferior
oppositions. The ele-
mentary and funda-
mental yardstick in
astronomy is the "as-
tronomical unit"-the
distance of Earth from
the Sun. By observing Eros, the
value of this yardstick has been con-
siderably refined. And as Eros comes
inward in the Solar System, it is, of
course, being acted on by the gravi-
tational fields of all the inner planets.
This fact can be utilized to deter-
mine the masses of the inner planets.

In the case of Venus, for example, the mass had to be derived in part from the influence of Venus on Mars. It was, to quote Dr. Paul Herget, one of the paradoxes of astronomy where "we photograph Mars to see how much Venus weighs." Photographing Eros for the same purpose gives better figures.
At this point, somebody is likely to ask about the mass of Eros itself. Well, that's not so simple. The best

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[PAGE BREAK]

used to trap and catch a thief, who had been stealing the property. After the next theft of property, several suspects were examined with the aid of an ultraviolet light. The shirt and hands of one of the suspects exhibited a tell-tale glow, and the law enforcement officials sent his shirt to the FBI laboratory. With it went a sample of the fluorescent powder that had been dusted on the government property. As a result, the infrared spectrometer showed that the sample fluorescent powder and the shining compound on the shirt were one and the same. The suspect then admitted his guilt in a court of law.
In the last ten years, the la spectrometer has contributed to industry, medicine and crim tection. But, in the years to c promises to aid in bringing abou industrial revolution. Until on cently, the spectrometer was exclusively in laboratories. However, because today more a

more infrared instruments are
moved right into the indust
plants to keep a constant check
chemical manufacturing proces
the process chemist has another
son for seeing the day draw
when he will be able to open
complete, automatically contr
plants.

Scientists Study Funeral Ship of Pharoah

Exploration of the newly discovered
model of a ship designed to carry the
soul of the ancient Egyptian Pharoah
Cheops to its heavenly resting place
may reveal to archeologists something
the life and character of that
more than the little now known about
greatest Pharoah of a great
dynasty.
the sun in its travels across the sky!
day and under the earth by night.
The ship was found be-
neath a road beside the Great
Pyramid at Giza built by
Cheops. The hull was cut
out of the solid rock and the
ship was sealed in by mas-
sive limestone blocks weighing 15 tons.
There is also a possibility that a sec-
ond model boat may be found later. Two
model boats formed a part of the stand-
ard tomb furniture of Egyptian burials.
The dead man was entitled to claim a
place in the boats of Ra, the day boat
and the night boat, which represented
The Egyptians believed that the he
en of the Pharoahs was located in t
eastern part of the sky. Common
ple went, after death, to the Ely
Fields in the western com
of the Underworld.
Archeologists also
that study of the boat be
to ferry Cheops' soul
give scientists more ini
mation about how the
cient Egyptians constra
the craft that plied the N
Comparable models of houses place
beside Egyptian tombs to serve
dwelling place for the soul have sho
the development of architecture from:

primitive tent-like structure propp
up with a couple of sticks to a two-ste
ventilators. Science News Letter
house with furniture, arched roof
BIGGEST ANIMALS-
PAST and PRESENT
by Willy Ley
Condensed from Galaxy Science Fiction Magazine
Celery Science Fiction, 421 Hudson St., New
14, N. Copyright 1954 by Galaxy Pub-
Corp
THE LARGEST land mammal of the present period is, by a comfortable margin, the African elephant. An old bull will stand 11 feet tall and reach a weight of from 6 to 8 tons. If one can put full trust in the reports of big-game hunters, bulls standing 11% feet tall have been shot in Africa. At any event, the African elephant is, on the average, half a foot taller and a ton heavier than the nearest runner-up, which is, of course, the Indian elephant. In the not-too-remote past, however, it would have been the African elephant who would have been designated as runner-up. One European variety of mammoth, found in Austria and now on exhibition in the Natural History Museum of Stuttgart, topped the African elephant by 30 inches, and another variety of extinct elephant, found in southwest Germany near Wiesbaden, topped this giant by another 10 inches.

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THE AFRICAN ELEPHANT
Even this super-elephant, though, was not the largest land mammal of the past. The record, as far as present knowledge goes, is held by Baluchitherium, a "hornless rhinoceros" from southern Asia, which was 27 feet long and stood around 18 feet tall. The present Indian rhinoceros

could have walked under a standing
Baluchitherium without ducking.
But mammals do not live on land
only. The marine mammals of to-
day hold the record over everything
else that ever moved, including the
dinosaurs.
The largest whale is probably the
kind called the Blue Rorqual. Even
conservative naturalists grant this
monster a body length of 80 to 85
feet. The weight of a fully grown
specimen of this whale is estimated
to be close to 150 tons. The large
whales of today are considerably
WILLY LEY, German-born rocket ex-
pert, has contributed to many scientific
and popular publications. Although he is
best known for his books and articles
about rockets and space travel, he has
written about many aspects of scientific
fact, and of the history behind scientific
research. Mr. Ley left Germany in 1935.
He is now an American citizen, living in
New York with his wife and two daughters.
Septembe
heavier than Brontosaurus, which
calculated to have weighed in at 3:
tons on the hoof. The whales of the
geological past, were far smaller tha
those of the present.
Proceeding to the birds, one
once gets into the dilemma of wh
to go by, linear dimensions or weight
The bird with the largest wing-
spread of the present time is the
Wandering Albatross of South Amer.
ica. The largest ever measured hat
a wing-spread of 12 feet and weighe!
15 pounds.
Biggest Animals - Past and Present
THE NEW ZEALAND MOA
The Madagascar bird stood 10
tall. It was of lighter build than
moa, but it did lay the biggest
The condor, both South America
and Californian, comes close with 1
maximum spread of just about 1d egg known to science-almost
feet, but it weighs as much as 31 inches long, with a cubic content
pounds. In the recent past, there waal to that of 7 ostrich eggs or 185
an even larger California condor that of the kind that come by the
topped the wing-spread of the alba

tross and was probably heavier, to
than the existing type.
Naturally, the flightless birds an
the biggest, for ground installation
always weigh more than airbor
equipment. The largest of today, the
African ostrich, may look down
you from a height of 8 feet and weid
160 pounds.
Only a few centuries a
ago, however
the African ostrich would have bee
runner-up to several other bird
giants.
zen.
The largest-or, rather, most mas-
t-of extinct birds well known to
leontologists was Diatryma gigan-
of Wyoming. This heavy bird,
sibly related to the cranes of to-
had a skull almost 20 inches
2. with a beak to match. Some
feet tall when standing erect, it
Est have weighed well over 300
ends.
The fishes are another class where
present holds its own well as
The biggest of the New Zeala pared to the past, even though
moas, was not a lot taller (probably as to be admitted that the record-
just a matter of inches), but mu
ders belong to an ancient type-
have weighed more than twice aly, the sharks. The basking
much. This moa was certainly stark is known to reach a length of
alive in 1600, the date for which th
to 35 feet, while the whale shark,
giant ostrichlike bird of Madagascantly made famous by Thor Hey-
is mentioned as still living.
hl and his Kon-Tiki expedition,

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is well established with 45-foot speci-
mens, and even 60 feet has been ten-
tatively accepted as a possible maxi-
mum size.
Past geological periods have not
yet furnished anything larger than
the whale shark among the extinct
fishes.
Now don't dismiss the inverte-
brates as tiny. True, they usually
are, for a 1-inch beetle will be con-
sidered a big fellow and a 6-inch

earthworm "enormous" and the African snail, which the Japanese spread over a large number of Pacific islands as a food supply during the Second World War, is known as the "giant snail." Its shell is 5 inches long and its overall length 9 inches; it is the second largest of the land snails of our era. The largest, also African, is about a foot long. But there are a number of other impressive exceptions from the rule that most invertebrates are small.

The largest clam of our time-and of the past, too, as far as is known■ occurs near the Philippines, on the Great Barrier Reef of Australia and generally in that area. It can reach a size of 5 feet and a weight of 500 pounds.

We now come to the reptiles and there, as everybody knows, the past greatly outshines the present. But the present is not doing as badly as most people think.

The large Indian crocodile, which shows a most remarkable preference for salt water and long swims in the ocean, would not look too much out

[PAGE BREAK]

THE INDIAN CROCODILE

of place in a landscape from the age of dinosaurs. One specimen, of which the skull is in the British Museum, has been found to be 33 feet long, with a circumference of 13 feet 8 inches!

The largest living turtle is a hefty animal, too. It is the leatherback turtle of the high seas, which grows to an overall length of 9 feet, the carapace measuring 6½ feet, and the weight of such a giant is an authenticated 1,450 pounds.

The largest living snake is the South American anaconda, of which many a wild tale has been told. Zoologists usually say that this snake

will reach a length of "well over 20 feet" and generally will be willing to settle for 25 feet as the limit. But one reputable source mentions a specimen that measured 30 feet. However, it was measured after death (understandably so) and if you stretch a dead snake of such length for measuring, you may add one or two feet to its "live length" without meaning to.

The largest lizardlike reptiles of today are, of course, the monitors. The East Indian monitor grows to a length of 10 feet while the still larger monitor from the small island of Komodo in the Sunda Sea is 2 or 3 or maybe even 4 feet longer. Both

are very long-tailed, so that the h four big paddles, a flat tail and figures are slightly misleading. The teeth.

heaviest Komodo monitor actua Above the waters where Archelon weighed was just about 100 pound the Mosasaurs competed for fish, Although all these are respectar largest flying animal of all earth's figures, they shrink by comparistory wheeled on leathery wings, with reptiles from former geologic so looking for fish. This was Pter- periods. Only some 20,000 ye don-mostly wings, with a ridicu- ago, Australia had a monitor lizusly small body and legs, but with that was more than 20 feet long a large though paper-thin skull and may have reached 30 feet.

long sharp beak. The wing-spread

The largest extinct reptiles wf one specimen has been computed the sauropod dinosaurs of the typ: 26 feet 9 inches.

of the well-known Brontosaure illustrated on page 19. Diplodocs was probably the longest because an elongated tail; measurements between 70 and 75 feet from nose tip of the tail.

PTERANADON

Not longer, but more massive far, and probably the heaviest of th

dinosaurs was Brachiosaurus fre The amphibians of today are gen- Africa. The length of the humer erally small. A 10-inch salamander (bone of the upper arm) of Brach "big" and a 2-pound toad some- saurus is 84 inches, as compared Eing worth mentioning. Still, in 474 inches for the same bone Japan there lives a salamander, Diplodocus. Brachiosaurus called Hanzaki and Hazekoi by the still breathe while walking along Japanese, which grows to slightly bottom of a 40-foot-deep lake! ver 5 feet in length. It is the larg-

Tyrannosaurus [pictured on the
front cover] was the largest
eating land animal the world
known. It, too, of course, was
of the dinosaurs.
The largest leatherback
would look quite small next
Archelon of Kansas. This turtle
some 60 million years ago must
been 13% feet long when alive
heavy in proportion, presum
around 3,500 pounds.
before the dinosaurs to encounter
Le Labyrinthodons, so named be-
use of the strange construction of
ir teeth. One species from north-
Europe had a 3-foot skull and an
erall length of about 12 feet.
O
The largest molluscs are the giant
quid, the Kraken of the Norse, but
For company, Archelon had fortunately nobody can give any
foot Mosasaurs, swimming replinite figures. One killed by the

23
crew of the French corvette Alecton
in 1861 could not be actually meas-
ured, since the crew of the ship, al-
though they tried hard, failed to hoist
it aboard. But the monster was di-
rectly alongside the ship, so that a
good and reliable estimate could be
made 50 feet without the tentacles!
No giant fossils of a comparable
type are known, but armorless octopi
would hardly fossilize. They would
be eaten by a large variety of marine
creatures before mud or sand could
cover the body. However, some oc-
topi produce shells the way the living
nautilus does and such shells fos-
silize easily. You can see long rows
of these ammonites in every mu-
seum.
The largest known was found in a
quarry at a place named Seppenrade
in Westphalia in 1895. The diameter
of the shell is 84 feet.
A 12-foot earthworm may sound
unlikely, but such earthworms exist
in Australia. They have as many as
500 segments and are fairly thin

when extended, about 2 inch.
When it comes to insects, one has to ask, of course, "What kind?" The largest living butterfly is a moth and so are the runners-up. The record is held by the South American owl moth with a span of 11 inches. The south Asiatic Atlas moth measures 10 inches in wing-spread, but has much wider wings than the owl moth. Among the beetles, the elephant beetles of South America and the Goliath beetles of Central Africa run in very close competition, both being 4 inches long in good specimens. The

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INSECT OF
PREY
The story of the wily ant-lion,
master strategist
By HIRAM JEFFERSON HERBERT
Illustrated by Jex
F
ROM the histories of bygone heroes we gather strange

facts. Progressive people of ancient days have contributed curious and interesting stories that tell of shrewdness and strategy. With much zest we read of the slight Napoleon, the amazing fire of the youthful, ambitious Alexander. The exploits of Tamerlane the Tartar are sources of rare wonder. At these things we marvel, yet in the world of insects we find histories and strategies that greatly surpass the accomplishments of man.

One of the most interesting of these creatures is this Insect of Prey. It makes a cunning practice of the nicest piece of strategy imaginable. It is a carnivorous insect.

By carnivorous I do not mean to imply that this interesting little insect stalks about in search of dead meat upon which it may feed. Neither does it await being fed by the hand of some keeper or slave that it has conscripted. Quite the contrary, this amusing little rascal falls entirely upon its own effective resources and depends upon no one. It is gifted with remarkable powers of subsistence and is endowed with a great deal of common sense.

This little fellow is named the ant-lion, not because it looks like either the ant or the lion, but because of its curious tactics. There is, however, some excuse for the fearful name from the mythological creature of antiquity which was reputed to be half lion, half ant, dashing about through the forests to frighten our foresires nigh to death.

Its life cycle consists of three definite stages well familiar to us: the egg, the larva, the adult, of which the larva is the most interesting. This is of particular engagement because of the fact that the larva seems to

bear the ear-marks of a perfectly developed, well-rounded insect. Its behavior and its astounding adaptation to its manner of living make it an exceptional study in insect life. So we will pass over the fact that an egg deposited in the dirt, which hatches into a "bug," which in turn and time weaves a perfectly round cocoon hidden in the soil, finally emerges as a fly similar to some of the smaller dragon-flies. Having done this, we will get along to one of the most interesting creatures found in our woods and ofttimes in our gardens. In my path

leading to the spring they are constantly active between the stones.

To begin with, our ant-lion seems to possess uncanny knowledge of the characteristic curiosity of ants. He gives astounding evidence of knowing that every self-respecting ant while cruising about amongst the leaves and poking her "brainy" antennæ under twigs and around stones is doing so because of her inborn efficiency. She is a very thorough and painstaking insect, more so than any other, leaving nothing within her province unexplored and taking absolutely nothing for granted. She must obtain first-hand information which she will hand over to her superiors upon returning to the formicary (ant nest) after the day's journey.

The ant-lion knows that mademoiselle ant will not overlook approaching the brink of every nook and cranny and pit! Always, upon perceiving a hole in the ground, she will hasten to its edge and peer carefully into its depths. If this happens not to satisfy her insatiable curiosity, further exploration is required. She will then proceed to descend the side of the pit, and that incautious step is very, very much to the ant-lion's liking- and rather necessary to his code of living in the manner

[PAGE BREAK]

mains of the ice-age, when many of these were engulfed. After the period of great value (equal weight in pure gold!) the price dropped. This was probably due to the fact that too many horns of the verum type were discovered, and also that the patients could not help noticing that the treatment with the precious medicine failed to cure the diseases for which it was prescribed.

The question still remains, however, was there ever such an animal as the Unicorn. It is, of course, unlikely that the animal with the magical qualities actually existed, but it is also unlikely that the story was based only on the evidence of the horns.

There are three scientific theories as to the origin of the fable. The first believes that the Unicorn is nothing else than a misinterpreted and "idealized" rhinoceros. The second theory also credits a rhinoceros, but an extinct

one. At the end of the ice-age, and probably many millenniums afterwards, a large animal, the Elasmotherium, lived in Siberia. The Elasmotherium was distantly related to the rhinoceros, but seemingly was not so bulky and had its horn in the middle of its forehead instead of on the nose. Old folk-songs of the Tungus, a tribe of the Siberian steppes, still tell the stories of the battles their forefathers fought against the Elasmotherium. The legends say that this was the animal the Ice-Giant rode when he drove out Adam and Eve from Paradise.

A third theory, and probably the one most near to the truth, was suggested by the German scientist, Professor Dr. E. Schrader. Schrader believes that Ctesias found in Persepolis pictures of the R'ém, the wild ox, showing the animal in profile so that it seemingly had only one horn. The Persians did not know the real wild ox. It was already extinct in their country, although it continued in northern Europe (for example in Poland) a few centuries later. So Ctesias already may have been supplied with a flock of fables when he first saw the picture of the animal and the fabulous Unicorn came into being through a series of misunderstandings.

Rocky Mountain Nuthatch

A'

LITTLE gay-gallant is the vivacious male nuthatch. Canny, too, he is in deluding any snooping human while he is feeding his mate upon her nest. But I managed, once, to outwit a Rocky Mountain nuthatch that was bringing food to his female who was brooding seven eggs in a big hollow of a ponderosa pine. Cautious at first, just so soon as he realized that "the jig was up", he came and went with fair bravado, entering the nest-hollow sometimes above the core of the limb, and sometimes below it. This type of nesting place is quite unusual with the Rocky Mountain race.

Cruising, one May day, along interminable Wyoming shale hills, I caught a quick vision of a female nuthatch flitting along a slit between two shale slopes. Instantly she disappeared into a sloping bank. Carefully I lifted the loose pieces of shale, revealing a narrow hollow. A probing

finger brought me a sharp peck
for my impudence. But this dar-
ing creature kept plumping out
from her nest-cranny after I had
driven her in, defiant of my
FOR FEBRUARY, 1936
TWO DIFFERENT NEST SITES
Homes of the Rocky Mountain nuthatch
under shale and in a typical
tree hole
By P. B. PEABODY
camerizing. Her nest was the
usual loose aggregation of vege-
table "loot", blended with fur of
rabbit and mouse retrieved from
excreta of coyotes.
There came a day of rare ex-
citement. Upon the bed of a wild,
narrow canyon, bristling with
dead cedars and living pines, I
followed the winding stream bed
upward. With sharp suddenness
a mourning dove flushed noisily,
and disappeared up the canyon.
Instantly the trained eye caught
just a glimpse of a fugitive bit of
gray, rising just beyond her and
disappearing on the nearby slope.
A female nuthatch it was, with
tail bent indicating nest-narrow-
ness. Then, slowly and stiffly she
hobbled along. Repeatedly she
shook herself, proof that she had
just left her nest. A second or two
later her mate appeared, out of
nowhere, with a bit of food in
his beak. Instantly the female
took it and disappeared under a
slab of sandstone beneath a great
pine. Beneath that slab, in a
flimsy nest, were five pearly-
white eggs, faintly specked with
pale-brown.
So I counted the day well-spent
79

[PAGE BREAK]

The Mystic Unicorn
T
By WILLY LEY
HE STORY of the Unicorn begins with a mistake in

the translation of the Bible. In some passages of the Old Testament a beast is mentioned "that never will be the servant of man." The Hebrew word for this animal is R'ém and it means the now extinct wild ox. In the translation of the Septuagint, however, the Greek word, Monokeros, is used, apparently because the story of a one-horned animal that was said to have great strength and fierceness was already well known. The word, Monokeros, which means "one, or single horn," was translated into the word Unicornis in the Vulgate-Unicornis being the Latin equivalent for Monokeros. So the Unicorn found a place in the Bible.

The Unicorn existed already in the Persian literature, antedating the Septuagint. It dated back to Ctesias, body physician of the Persian king, Artaxerxes II. Ctesias said in his description of India that there were wild asses, famous for their great running speed and similar in appearance to a horse. The colors were black, white and red and they had a single long and twisted horn in the middle of their foreheads. This horn, Ctesias emphasized, would be valuable as a drinking cup, for this material would inevitably prevent poisoning.

Such was Ctesias' story and all ancient authors copied it, each giving the Unicorn a few more features, such as the cloven hoofs of a goat, the hind legs of an antelope and the tail of a lion, or sometimes that of a pig!

Ælianus, a Roman author, stated that the Unicorn was sometimes also called Carcazonon, possibly a distorted form of the Arabic word, Carcadan, for rhinoceros.. It must be remembered that the rhinoceros, although it does not look like it, is capable of swift motion and has all the strength the Unicorn was said to possess.

The horn of a Unicorn that was presented to Pope Gregory XIV in 1590 by the Prior and Brothers of the Monastery of St. Mary Guadalupe, Spain, was actually the horn of a rhinoceros.

This was learned several centuries later, when in 1909 this famous horn was offered for sale. It has now its place in the American Museum of Natural History, New York, in the Hall of South Asiatic Mammals, The tip of the horn is missing. It had been ground to powder and administered to Pope Gregory during his last illness.

But the mixing up of

the wild ox and the Uni-

Einhorn.
Monoceros.
THE UNICORN ACCORDING TO ONE ARTIST
The Greek word, Monokeros, means "one, or single horn" and crept into Biblical lore
corn on one side, and the rhinoceros and the Unicorn on the other side, is not the whole story.
When, in the Sixteenth Century, the Swiss naturalist, Konrad Gesner von Zürich, who has been termed the German Pliny by the French and the father of modern zoology by the Germans, was busy with his collections of material about all known species of animals, he hesitated when he came to the Unicorn. Frankly, he did not believe the story. Being the city physician of Zürich, he was well acquainted with the use of Unicorn horns in prescriptions for wealthy patients. It was said to be the most potent medicine on earth. Certainly it was the most expensive! Gesner himself had prescribed it from time to time, but he confessed in his medical books that he never, when the patient insisted on the prescription of Unicorn horn, forgot to prescribe other medicines too! He could not deny the fact that Unicorn horn existed in the pharmacy shops, and he was also quite sure that it was not rhinoceros horn.
In those times Unicorn horn was on sale in every large drug store and the pharmacists carefully distinguished between "unicornum verum" (true unicorn) and
POSSIBLY THE SOURCE OF THE UNICORN
A drawing, probably of a wild ox, showing one horn and perhaps giving birth to the Unicorn
"unicornum falsum." Unicornum falsum was the horn, or rather the tusk, of the male narwhal, sold at exorbitant prices by northern fishermen who kept its origin secret. Unicornum verum, to be genuine, must have had its origin in the earth. Some of them have been preserved in European museums, revealing that they are nothing else than tusks of ancient elephants, found frequently all over the European plains, part of the re-

[PAGE BREAK]

arising from wet leaves, damp pine-needles, misty myrtles. Through the plumed and purple tops of the pines the starlight steals wildly yet softly. From broom-sedge and white sand and warbling water clean aromas exhale. It is the hour of Nature's brimming chalice.

After a while the woods begin to be full of subtle movements of the wild creatures; there are subdued crackings of dry branches and twigs; there are sinuous brushings aside of bay-bushes and gall-berry plants; there are wary footfalls, almost soundless, yet audible. The barred owls and the great horned owls hoot, scream, and weirdly intone their occult callings and challenges. I hear an old foraging raccoon grunting in the bosky green darkness of a watercourse. All about me there is the sense of a host of shadowy creatures, near yet invisible; intensely wild, yet close to me. I identify them by the little noises that betray their presence and their identity. In the brightening starlight I can barely discern a few of these. That eerie form, looking almost black in the white road, is a gray fox; that stolid lumbering shape that looks almost white against the dark pinestraw of the forest floor is a 'possum, a strange Dickens-like character in the community of wild Nature that just wheedles his way through life. Little elfin noises in the bushes and the grasses and among the fallen pine cones tell me that the wood-rats and wood-mice are frolicking and feeding. It is strange, but one of these humblest rodents makes almost as much sound in moving about at night as does a deer, the noblest game of that country. He is the very spirit of the night: secret, star-wild, vanishing. I know now that deer are abroad in the dusky woods within easy sight, if it were day; but they are invisible, and the few sounds they make seem but a of the wide mysterious whispering of the part

forest. Yet now I know that I shall see some of them, for that conflagration in the east, where a thousand pines are beginning to burn, is the rising moon.

From my station, which has been by the darksome borders of a gum and tupelo swamp, I move up a little woodland hill, where the forest is and parklike. On open

my way, wild things get my scent, and scuttle or dash softly or crash away, the manner of their flight being determined by their size and their temperaments. By the time I reach my new position, moonlight is flooding the woods, and that mystic radiance has both a revealing and a concealing power. Here I will sit until deer come by me in the moonshine, as I know they will; for over this little rise runs one of their favorite paths. While they wander and stray a good deal to feed, they have standard

highways; and from plantation records, that go back as far as the year 1686, I have reason to know that the wild deer are now using the same pathways through the woods ago;
of home as they did three centuries and a half and likely for ages before the coming of the French Huguenots.
Often have I watched deer by moonlight; sometimes from the ground, sometimes from a platform in a tree. On this particular evening I was just sitting on an old pine stump. Moonrise in the pinelands is the witching hour, when every scar is magically healed; when every object, however obscure and mean its aspect by day, is wrought to virginal marble by an all-forgiving wand, is statued in lily-white stone. The beauty of the moonlight has always seemed to me not so much a thing in itself as its transforming and transfiguring power. In that it is like love.

I have a long wait; but who will not wait amid deepening peace and increasing loveliness? At last they come: two fairy shapes, silent, elusive, beautiful. The mild night air is drifting from them to me, so that they do not detect my presence. Here are two great silver stags, with silver horns, moving with unpostured grace through a silvery world. They pause, as if posing for an argent picture. Nearer they come; and I notice that at certain angles in the moonlight they are almost invisible; at others they are vividly visible. Past me they glide, like spirits of the wilderness, having all the meaning connoted by the night, by stillness, and by the unwearied charm of Nature. Into the silver silences they vanish.

In these pinelands there formerly were many homesteads, now not only deserted but so completely disappeared that their sites are marked by nothing but a few live-oaks that seem memorial. The mocking-bird is not usually a dweller in the woods; but often a pair will be found in one of these oaks, the trees and the singers continuing the tradition of former human habitation. As I leave my station to turn homeward, in the lonely moonlight, I hear a mocking-bird filling the tender silence with ecstatic song. On quivering wings he rises, singing in his flight, flying as if on the wings of song. It is to this melody that I walk back to the plantation road, reaching it as the real deep of night comes on. To me there is something strangely unexpected in hearing a mocking-bird choiring in the pinelands, something as disconcerting as a baby's sigh; as if I had not really understood all that was in a heart that I thought I knew.

Yes, romance is in the pinelands; often when dawn spreads over them the streamers of her wide effulgent banners; often when those solitudes are shaggy with twilight; but most, I think, when night there ascends her lonely fragrant throne. For then the soul, like some shy

flower, opens wide under the light of stars.
Night
in the pinelands has brought me great happiness; and
happiness is power, though power is not happiness.
We are happy to announce that another article by Mr. Rutledge will appear in the March issue of Nature Magazine, combining, once more, his understanding knowledge of wild-life, his philosophy of the many values of our outdoors and his outstanding literary skill.
FOR FEBRUARY, 1936
77

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The WORDSMITH
E c le @tic
2nd Printing/REVISED
COLLECTOR
Issue No.
Special Issue Honoring RAY BRADBURY
BRASS TACKS
The margins of Astounding have been
made a fraction smaller-the text is
the same.
Dear Mr Chelatest issue of Astounding for.
day and was immediately elated. Your cover.
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10 her! Rogers be has proved himself an AC-
complished artist frein the start. It's easily the
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beat
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bought was a freak, but in comparing this er
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tin Dud that it is about one fourth of an inch
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its own.
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easier to handle and better to
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really came to selence Action
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Fred
struck oil with me
Paul Ernst should write many more selence
than be does visits are all
Brtion
Some of his descrip
too infrequent judging by his superb "Nothing
Happens On The Moon.
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"writer's
in amateur
so far: give me time you'll get a barrage of
lal. (Yes, I'm a writer myself-
Dianuscripts before long.)
Where to eck was Doid this issue? I liked
bis illustrations for the January jesue, but be
no show up this time Howeum Ye gods! Get
rid of these Binder cartoons that he sloshes onto
paper-tuure of Wesso-less of inder, pab-lease.
Thanks willion for putting out Unknown
I can hardly wait to read it-it's what i
(lucidentally
Inside.
159
The length of "Crucible of Power"
I haven't enjoyed
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loux time. "O!" was a good slurs and I liked
Keith even though he did grate on the nerve
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wondering where in 'ell to send it, 'cause there
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Brother Nat write a story
A high as third place?
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word.
Wel Simak id Come galaxy prying be-
fore he finished!
Dear Editor:
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Slank rival mare hasn't
single galaxy pried out of place
that's what I think of Dr. Smith
stop at So. . wherein stabils
of a story gone and
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myself in reading the current Astounding
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April-May 1997
SUMMER
Book Reviews
Articles
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Net Simak's story-
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A STRIFE & SMITH
WORLDS DON'T CARE by NAT SCHACHNER
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and bumorous author. Schachner
"Palooka From Jupiter." Almost a good
for the article on lee
look forward to the warm weather he
Thanks to Le
There are so many new magazines to compete
with you is your own feld now that one must
paper. These new
forever resign himself
magazines split up the so. Quality of $10-
ries must also suffer, but an yet your magazine
shows no such decline. Probably because of the
better rates you offer.
Mr. Asimer thinks women of no account is
are the famed
leaders. But history is
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and oppression. Women are not famous for ca
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But walt-wasn't there a certals
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Women Lay.
I am reading what I b
iny experience
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Dea't give man
[AD] $2.00
1997
Fiction
Trade/Sale Offerings
- http://members.aol.com/stfwriter/index.html

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The WORDSMITH Eclectic COLLECTOR
WORDSMITH / COLLECTOR BUSINESS DATA
Issue No.4
The WORDSMITH Eclectic COLLECTOR
[AD] P.O. Box 1258, Simi Valley, CA 93062-1258
Telephone (& 24-hr fax): (805) 583
1300
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item(s) up to two (2) weeks, shipping when your check or M.O. arrives. Please list alternate
selections. SF&F magazines are bagged. These items are "treasures" to me, and are packaged
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IF YOU PAID FOR THIS ISSUE you will be credited that amount when you place your first order.

SPECIAL LISTS: Page 7 describes separate Classics Illustrated&Jr and "Hollywood-iana" lists.

CONDITION: I describe condition partially relative to the item's age. Thus a 60-year old Amazing Stories rated "VERY GOOD" or VG may not be in the same exact condition as a 30-year-old Analog with that rating. If there is any significant damage (tears, broken spines, missing covers or pages, etc.), it is described herein.

For magazines I use the condition identifiers listed below, which approximate dealers' "standardized" codes. However, dealer condition identifiers are subjective, so actual conditions can vary widely. My approach is to grade on the low side; I'd rather surprise someone with a copy in better condition than anticipated. That's happened to me and it felt good, so I'm trying to pass it on. NOTE: PBS and HCs are coded differently. (See Page 18.)

FINE
VERY FINE/MINT Never read or used. (Used only for works from my personal collection.) Virtually like new, minimum IF ANY evidence of wear or use.
NEAR-FINE/NF
Evidence of wear but not serious; "Fine" for its age.
VERY GOOD/VG
NEAR-VG/NVG
GOOD
FAIR
POOR
Expected condition for its age; shows usage; no serious problems.
Somewhat more wear than VG; has some defects, but looks OK.
Shows its age; worn; may have fraying, chipping, tape, some staining, and/or marring from ing label, etc.
Rough condition, tattered; NOT PRETTY, but complete and readable.
Still a readable copy with careful handling; well worth preserving because of what it is.

EXCEPTIONS may include missing cover(s) or page(s) (but no issues are missing any pages that critically impact story contents), as well as marks, stains/soiling, tape, creases, etc., that mainly affect appearance but are separate from the overall condition of the magazine, described where applicable.

NOTE: Strikeout listings = SOLD.

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STRANGE & UNKNOWN-NON-FICT PB.
STRANGE & UNKNOWN-NON-FICT HC.
THE MYSTERY GENRE PAPERBACKS
THE MYSTERY GENRE HC BOOKS
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.26
An Editorial
of Sorts

MORE CHANGES have been made, starting with the name of this publication; it now better reflects my technical writing business name, WORDSMITH. (The Post Office agrees.) And, it is eclectic! My Issue #3 cover is the back cover because (1) it's appropriate for this issue, (2) it cost $$ to produce and I want more mileage from it, and (3) I LIKE IT!
I've succumbed on two fronts. 1st, the urge to publish a 'zine, the first since my two 1953 debacles, just for the fun of it. The inspiration came after meeting Ray Bradbury. I hadn't planned Issue #4 this soon, but necessary changes due to the good response to #3 made it worth the effort. More SF&F has been added, book lists pared, want lists included, and additional PRICES CUT, as noted. The 2nd "cave-in": I can be reached via e-mail (opposite page). I'm "on-line" with great trepidation; I see too much illiteracy, idiocy, and ignorance on the Net.
[AD] Restoration of my "lost" collection (selective 1923-1961 + certain post-1961 magazines) is progressing. I still have a major space-storage problem. I'm anxious to clear out these duplicate and excised magazines and books to accommodate my REAL collection. So please: take a look, make a selection (or two or several), and send an offer.
Vince
- VINCE NOWELL
Cover: 18-year-old Ray Bradbury's letter to Editor John W. Campbell, Jr., Astounding, April 1939, now signed.
Contents 1997 by WORDSMITH. Editor: Vince Nowell. Bradbury photos: W. L. Sisson; BkCov as noted.
THANKS CONTRIBUTORS! PHTS: R&D Photographic, Simi Valley. Production: St. Dominic Press, Simi Valley.
ED MCMANUS' ENCOURAGEMENT: "DON'T LAUGH TOO HARD! REMEMBER, GERNSBACK STARTED OUT WITH CATALOGS.

[PAGE BREAK]

The WORDSMITH Eclectic COLLECTOR
SCIENCE FICTION & FANTASY / HORROR MAGAZINES
SECTION 1.
YEAR AND ISSUE
WHOLE
NO
CONDITION, ANY EXCEPTIONS & SIZE NOTES
The WORDSMITH Eclectic COLLECTOR
Issue No.4
Issue No.4
YEAR AND ISSUE
NY
1940
November
120
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES
PRICE
1941
September
130
1978 Annual
No.1
1989 July-August
NEAR-FINE+ First anthology issue
16

FINE
Sept-October
17
VERY FINE/MINT
1990 July-August
22
MINT (Opened mailing wrapper once)
24
MINT (Opened mailing wrapper once)
VERY FINE/MINT
26
VERY-FINE/MINT
May-June
27
MINT (Opened mailing wrapper once)
MISTRESS, renumbered "No.1" with 3rd
1994
Fall-Winter No.1
VERY FINE (Four-color cover)
ABORIGINAL SCIENCE FICTION "First all-slick/-color" SF magazine.] All 7 below: $23; w/Annual: $25.50.
Nov-December
1991 Jan-February 25
March-April
12 stories from first 7 years
Soviet humor: Kir Bulychev
"Premiere Newsstand issue" [sic]
Mike Resnick, Robert Metzger
Robert Metzger, Lynn Hightower
Robert Metzger
Terry McGarry, Ann Schwader
HARLAN ELLISON, Frederik Pohl
ABSOLUTE MAGNITUDE The Magazine of Science Fiction Adventures [First 2 issues:
AMAZING STORIES [Venerable Grandfather of U.S. scientifiction, died in 1995 at age 69 years!]
1940 August
H.G.Wells, David H. Keller, Gernsback art,
letter: 97-yr-old reader (fascinatingl
E.E.Smith, Hamilton, Meek, Fletcher Pratt,
return of Frank R, Paul as illustrator
Ralph Milne Farley, Edmond Hamilton
[AD] $10.00
1928 June
27
1930
August
53
GOOD but spine damaged; Bedsheet;
definitely a collectible! REDUCED$
FAIR overall/Canon color FC & BC;
bedsheet; nice reading copy
1947
January

152 FINE
210 GOOD
[AD] $15.00
1991 Summer
1994 Summer
$ 6.00
1941 January
1950 January
246
April
249
FINE
1959 June
353?
GOOD/N-VG Digest size
1985
1994
March
Fall
521
FINE+ Digest size
591
VERY-FINE/Practically Mint,
NE
Anderson, Garrett, Rog Phillips
Robert Silverberg, Thomas A. Disch
Ursula K.LeGuin, M.Resnick, Silverberg
$ 3.00
$ 3.00
DESTINIES
FINE 1st issus-Howard Browne, Editor
-Howard
Richard S Shaver
Richard S. Shaver
Robert Moore Williams
[AD] $3.50
$ 5.00
4.50
$ 3.00
1942 May
138
$ 5.00
$ 3.00
1943
September
154
$ 4,00
$ 4.00
4.00
.00
1946 September
190

NEAR-FINE digest size; a prime find!
$ 4.00
[AD] $5,00
WHOLE
_NO. CONDITION, ANY EXCEPTIONS & SIZE NOTES
GOOD-
sp bottom/covers have tears, sm.
miss.pieces; pages are NVG cond.
N-VG for its age; sm.hole BC & sp.top;
slightly chewed outside edge FC
NVG Only slight H2O stain prevents a
rating of VG for this bedsheet
NVG- Chewed lo.rt.corner FC; bottom sp.
damage; BC slightly loose
HY
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES PRICE
L.RON HUBBARD (writing as René Layfayette);
Simak; art: Willy Ley
[AD] $12,50
[AD] $13.50
DEBUT RAYMOND F. JONES: HEINLEIN: ASIMOV's
"NIGHTFALL"; art: de Camp, JWC, Jr.
HEINLEIN (A.MacDonald) + R.A.H. bk review;
ASIMOV's "FOUNDATION"; Itrs: Ley,de Camp $14.00
RARE (ONLY?) APPEARANCE OF RAY BRADBURY IN
ASTOUNDING, sh. story AND sh-sh,story; and
Anthony Boucher writing as H.H. Holmes
Raymond F.Jones' "The Toymaker," Asimov,
Dalton Edwards' classic "Heihem in Ce
Klasrum, G.O.Smith; Dr.R.S.Richardson
[AD] $13.00
[AD] $9,00
1949
November
228
HARSH
issue = 1st issue Absolute Magnitude.]
Hal Clement, Roger Zelazny
1953 February
1956 May
267
306
N-VG except some damage to spine; digest HEINLEIN, Sturgeon, van Vogt, Lester del
N-VG digest
Rey, Isaac Asimov
$.4.00
NEAR-FINE digest
WALTER M.MILLER, JR., H. Beam Piper, Nourse
Robt.Silverberg, R.F.Jones, Asimov
$ 2.00
[AD] $3.00
$ 4,75

CEMETERY DANCE [Joe Lansdale, Contrib.Ed./8x11 slick, perf.bind, full-color cover, WT-type.]
No. 9 NEAR-FINE tiny crease low-rt corner FC
No.21 MINT CONDITION
Bill Pronzini
$ 3.00
M.J.Costello, Norman Partridge, M.Shea $4.00
COMET-STORIES OF SUPER TIME AND SPACE [F.Orlin Tremaine, Ed, comeback try after Astounding.]
V.1/#2 FAIR-POOR getting brittle, but readable
with careful handling; collectible
item because of scarcity & contents
Sam Moskowitz, Binder, Harl Vincent, Frank
Belknap Long, R.R.Winterbotham, sh-sh Robt.
W. Lowndes; Itrs: Isaac Asimov, Jules Unger,
James Taurasi, Robt.W. "Doc" Lowndes
$ 8,50
The Paperback Magazine of Science Fiction and Speculative Fact
CLOSEOUT! ELIMINATING THIS FROM MY COLLECTION
One of 70s ambitious endeavors to "upgrade" SF by issuing pb size anthology "magazines." Ace Books Div. of
Charter Communications, Grosset & Dunlap. Edito: James Baen, former Galaxy ed. for UPD (1974). Typ: 314>pp.
V.1/#1 VERY-FINE/MINT
V.1/#1 FINE nearly mint
Anderson, Niven, Simak
Anderson, Niven, Simak
$ 4.00
ANALOG SCIENCE FICTION ("Science Fact/Fiction"/etc.) [Whole No. starts 1930; Analog No.: subtract 358.]
N-VG but marked cover; bedsheet slick
NEAR-FINE except marked cover; bedsheet
VERY GOOD but 1st ad page gone; bedsheet
FINE bedsheet slick
VERY GOOD bedsheet slick
1963 May
June
390
NEAR-FINE "bedsheet" Slick
391
July
392
August
393
1964
September
406
December
409
1977
November
564
1981

November 9th 613?
1982
Mid-Sept
624?
1985
October
663?
FINE
1986
January
667?
FINE
1992
Mid-December 761?
1994
1996
Mid-December 791?
February
8067
VERY GOOD slight FC damage
VERY-FINE/Practically Mint
NEAR-FINE read once (carefully)
NEAR-FINE digest size (from here one)
N-VG but some BC damage
VERY-FINE
Bova, Schmitz, M. Reynolds, Tubb, Spinrad
McIntosh, Anderson, Schmitz
"Old-timers": Clifford D.Simak, Kris Neville, Harry Harrison
Arthur Porges, Leinster, Harrison
Randall Garrett, Schmitz, Piers Anthony
Leinster, Harrison, M. Reynolds, Spinrad
Spider Robinson, O.S.Card, M. Reynolds
G.Harry Stine
L. Sprague de Camp, Jerry Pournelle
Stanley Schmidt-Editor
Frederik Pohl
Charles L. Harness
ASIMOV'S SCIENCE FICTION [aka ISAAC ASIMOV'S SCIENCE FICTION MAGAZINE
1994
Mid-December 225
1996 March
241
FINE/Virtually MINT (I.A.'s S.F. Mag.
NEAR-FINE read only one time
V.2/#1 FINE/VIRTUALLY MINT Issue No.8
V.2/#1 FINE Issue No.6
V.2/#2 FINE Issue No.7
V.2/#3 VG+ Issue No.8
$ 6.00
$ 5.00
1978

$ 5.00
$ 5.00
Nov-Dec
Nov-Dec
1979 Aug-Sept
1980 Feb-Mar
V. 1/#4 FINE/VIRTUALLY MINT
$ 8.50
$ 5.00
Feb-Mar
Spring
$ 3.00
Summer
$ 1.50
3.00
3.00
3.00
1947
December
49
N-VG -
2.00
2.50
1948 February
50
Very collectible due to Doyle
SOLID VG! Virgil Finlay FC
2,00
Editor: Gardner Dozois (A Dell/Bantam/
Doubleday companion to Analog SF
$ 2.00
$ 2.00
ASIMOV'S SF ADVENTURE MAGAZINE [Not same as above, tho' George Scithers first edited both.]
$ 4.00
1979 Fall
1937
No. 4 VIRTUALLY MINT!
83
This was final issue.
John Brunner, Isaac Asimov
ASTOUNDING STORIES/ASTOUNDING SCIENCE FICTION [Whole No. starts 1930; ASF no. subtract 87.]
Jr. took the helm in October 1937.
The venerable Rolls Royce of science fiction magazines for many generations, in all its variously titled incar-
October
nations, began with the January 1930 issue. ASTOUNDING really began its ascent to glory when John W. Campbell,
GOOD-BC/sp loose; low. left FC loose;
(A "trimmed pulp" of 61 x 9 since May 1936.)
general wear but very readable!
NVG

John W. Campbell's editorial debut
some creasing, sm.tear FC
Last issue as "...Stories": POOR- FC
torn, pcs.miss., holes; COMPLETE
1938
November
February
84
87
1920 January
FEATURED ON COVER OF THIS 18SUE:
1939 Aprit
NEAR FINE
101 N VG Wonderful collectib
endirian AUTOGRAPHED
Don A.Stuart (=Campbell), E.E. Smith, Manly
Wade Wellman; articles: DeWitt Miller;
John W. Campbell, Jr.
E.E.Smith; Burks; Binder; Itrs: Campbell
Eando Binder writing as Gordon A.Giles,
Smith, Arthur J. Burks, Nat Schachner
0.9.Card, Frank Herbert, Saberhagen
Dickson, Pohl, Pournelle
Dickson, Pohl, Pournelle
ROBERT A.HEINLEIN, James Gunn, Pohl
ROBERT A.HEINLEIN, Pohl, Niven
FAMOUS FANTASTIC MYSTERIES [Wonderful reprint mag only have two duplicates
$ 3.00
$ 3.00
3.00
$ 2.50
$ 3.00
$ 3.00
both are great!]
ARTHUR CONAN DOYLE'S WWI aviation fantasy,
"The Horror of the Heights™
$ 8.00
Derleth, S.F.Wright; Itrs: Moskowitz, Oliver $8.00
FANTASTIC [aka -Science Fiction - Stories of Imagination-Science Fiction & Fantasy Stories!
Ziff Davis/Editor Howard Browne got this off to the most successful start of any modern SF&F magazine (Summer
1952), quickly switching from quarterly to bimonthly, and monthly within two years. This sophisticated digest,
companion to Amazing Stories, hastened the demise of pulp Fantastic Adventures, and led to Amazing going to
digest. It began as a fantasy/macabre/horror mag, but subsequent editors claimed, variously, that SF sold bet-
ter, or that there was a distinct market for fantasy, and so on. These viewpoints were reflected not only in
contents changes, but also in repeated title changes as Fantastic sought its identity. After the first two
years its uniqueness as a fantasy vehicle wore off. After the mid-1950s it became more of an
avant-garde pub-

lication in the "speculative fiction" field before being absorbed by Amazing Stories. However, during its tod-
dling years it probably came the closest of any publication since 1943 to being another Unknown Worlds.
October
1955
? N-VG
1959
February
NEAR-FINE
$ 5.00
[AD] $10.00
$ 2.50
1960
1961
1971
December
February
August
GOOD fully intact, complete
GOOD++
Readers bitch mag too much like Amaz-
ing; Garson, Fairman, Grant, Butler
Editorial change back to emphasis on
fantasy; Wyndham, Fairman, Rog Phillips
Porges, Galouye, Poul Anderson
Keith Laumer, Arthur Porges
$ 1.75
$ 2.00
$ 1.50
$ 1.50
FINE Editor: Ted White, an old "fapa"
partner of mine from 1954
1972 June
189
FINE
Anderson, Rocklynne, L. Sprague de Camp,
debate ensues about meaning of SF
Malzburg, Eklund, Dennis O'Neil of Green
Lantern Comics fame
$ 2.00
$ 2.00
October
173
Avram Davidson, Fritz Leiber, de Camp
$ 2.00
L.B.deCamp, Jameson, Wellman; let OF CON $14.00
to Itre, Williamoony Cimak, Jameson, Binder: lettere+
deCamp, Acimey, and "amatour writer" BAY DOUGLAS
BRADBURY (SIGNED ON LTR PAGE) It
025-00
VERY FINE (debates rage re modern SF&F)

PAGE 4
PAGE 5

[PAGE BREAK]

The WORDSMITH Eclectic COLLECTOR
YEAR AND ISSUE
WHOLE
NO. CONDITION, ANY EXCEPTIONS & SIZE NOTES
Issue No.4
The WORDSMITH Eclectic COLLECTOR
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES
MY
PRICE
YEAR AND ISSUE
WHOLE
NO
CONDITION, ANY EXCEPTIONS & SIZE NOTES
GALAXY [The "Revival"]
[AD] FANTASTIC ADVENTURES [Pulp companion to Amazing Stories 1939-1953; merged into Fantastic.]
A Palmer ("RAP") creation, one of the greatest fan-oriented mags in SF's "Golden Age.
Carried "lighter" mater-
ROBERT BLOCH "Lefty Freep" story, Hamilton, E.F.
It was an early casualty of transition from pulps to digests.
1942
1943
January
23?
ial than Amazing, and had a sense of humor.
VG very collectible, 244pp-size
August
187
VG very collectible, 244pp-size
1947 December
667
1940 December
N-VG a "keeper," 180pp-size
709 FINE very collectiblet
Russell, August Derleth, A.M.Williams
ROBERT BLOCH "Lefty Freep" story, Wilcox,
Dwight V. Swain
Swain, Geoff St. Reynard (pseud.?); RAP is
Ed, but Wm. Hamling Assoc. Ed.
Richard 9. Shaver, Chester Grier, and "Les
Francis" (Howard Browne, future Ed.)
799 FINE very collectible! 10th Anniversary
Grier: The Acturn of Simbad complt novel $5.00.
1949 January
available: November
1950 June
897

GOOD
96? FINE very collectible! II. Browne now Ed.
Palmer's next-to-last issue as Ed.
Issue No.4
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES
MY
PRICE
Gold, daddy H.L.'s son.
A strange magazine out of California's "Gold Rush Country," Nevada City, in the high Sierras, edited by E.J.
Published by not-for-profit Institute for Development of the Harmonious Human Being,
southwestern-style modern artwork.
nc. [sic], and carrying advertising for very expensive SF&F limited-edition books and audio tapes, as well as
Resurrected in January 1994 as 8 X 11, perfect-bound, dull stock "bed-
Sept-October No.5
sheet" carrying a few reprints from old Galaxy, and new speculative fiction and features, Not my cup of tea!
VERY-FINE/Virtually MINT
Poul & Karen Anderson, Barry Malzburg, Gordon
R.Dickson, Evelyn E. Smith
FOOLIDEN FLEECE
Historical Adventure
$ 4.00
Tnadvertently acquired a
Frederic Arnold Kummer, Jr., Anthony M. Rud,
Itra reflect antithesis of BF fane
Having earned my college degrees in history, this is one of my all-time favorites.
December
duplicate issue (and still need two others to complete my collection).
NEAR-FINE tiny piece missing, top-left
corner of FO
No. 3
GREAT SCIENCE FICTION [aka SCIENCE FICTION GREATS]
1966 Spring
No. 2 NEAR FINE reprints from Fantastic
No. 8 GOOD FC etained, otherwice overall Good
No.15 GOOD (now Science Fiction Greats)
4067 Falt
1973 August
No.2
Ultimate Pub.Co. repr Ziff Davis mags.]
ROBERT BLOCH, HARLAN ELLISON
JACK VANGE, John Jakee
Arthur C. Clarke, John Brunner, Jakes
$ 3.50
[AD] $2.00
$ 1.75
THE HAUNT OF HORROR - Tales of Terror and the Macabre [Stan Lee/Marvel Mag.Group-NOT A COMIC!]
N-VG except for vertical crease down FC
KELLY FREAS Cover for O'Neil story

"Devil Night"
ELLISON, McCaffrey, Goulart, Lin Carter,
Fritz Leiber's Sequel to "Conjure Wife,"
Dennis O'Neil (Green Lantern fame)
$ 5.00
$ 9.00
$ 9.00
1994
$ 4.50
5,00
$ 3.00
GONE
1938
A "Toffee" novel by Myers, Mack Reynolds,
4tri from 11 yr old Bob Silverberg
5.00-
1951
August
110? N-VG
William Tenn, Sturgeon, Fairman (future Ed.),
ltr: from now 15-yr-old Bob Silverberg $ 2.50
Fairman, Williams; ltr, Terry Carr
[AD] $3.75
December
January
February
April
1142 NEAR FINE
1969 Summer
June
115? NEAR FINE
1167
118? FINE a "keeper"
1202 NBG, otherwise contents GOOD & complete
NBC, otherwise contents GOOD & complete
Grier, Fairman, Jorgenson, Milton Lesser
Rog Phillips, Paul W.Fairman
$ 1.00
$ 4.50
Witoox, Leseer, Fairman, Stephen
Marlowe (Milton Loccer)
1.00
GONE
July
1217
FINE very collectible!
122?
NEAR-FINE a "keeper"
JOHN JAKES "And the Monsters Walk," Sam
Merwin, Jr, "One Quitar"
Phillips, Lesser, Wilcox
$ 4.50

$ 3.50
IMAGINATION
1251
NEAR FINE & "Keeper" 5th from last issus McGivern, Morrison, Stewart
ALL
Stories of Science and Fantasy
August
November
FUTURE.. [aka - Combined with Science Fiction Stories/ - Science Fiction Stories/ - Science Fiction!
Columbia Publications had trouble deciding what to naria this post-WWll revival in its decade of existence.
The volume/no. count began with V. 1/#1 with May-June
ended as a digest, but is better remembered as a pulp.
1950 premiere revival issue. Whole No. here refers to 1939 beginning; postwar no.: subtract 17.
1951 July
1952 July
31
25 NEAR-FINE would be FINE except for some
slight sp damage; Post-war #8
FINE Ed. Robt. W. Lowndes: one of the best
treatises ever on "what is science
fiction?"; Post-war #14
1953
January
34
March
GOOD but NBC, some spine damage; very
readable copy!%; Post-war #17
HEAR FINE would be FINE except for small
corner missing from back cover;
Poot war #10
feee origine offer D.10) $ 4.00
1951
September
No. 6
November
No. 7
N-VG
N-VG
1952
September
No.12
VG
It
1953
1957
April
17
VG
December
POOR NFC contento/op compleje

G.O.Smith, decamp, Lester del Rey, C. Dye,
N. Loomis; ltr: James Blish on Dianetics
Charles Dye novel, Wallace West, Lester
del Rey, Jerome Bixby, ltr: from Judith
Merril
$ 4.00
John Wyndham, James Blish, H.B.Fyfe,
Damon Knight
Simak, Anderson, Merril & "James MacCreigh"
(Frederik Peh Raymond E. Jones "The-
Heen is Death:
$ 5.00
$ 1.75
1953
1955
1956
Q
Q
MAGAZINE
1951
March
No.6
tered, some H■O stain, ink sarke:
rough but readable & COLLECTIBLE+
NEAR-FINE a great collectible
GALAXY SCIENCE FICTION
The very late H(orace) L. Gold's idea of the perfectly balanced SF magazine, this quickly became a "literary
[AD] leader" from 1950-1960. In Spring 1959 Galaxy acquired James L. Quinn's IF, then merged the two in Spring
1975. Gold left in 1961 to be followed by the very capable Frederik Pohl (until 1968), then Lester del Rey,
until Galaxy was sold to UPD (1969), with Eljar Jakobsson as Editor, followed by James Baen (1974), then John
J. Pierce. Through the years the "associate editor" roster was impressive: Groff Conklin (book reviews), Willy
Ley (Science Editor), Sam Merwin, Jr., Damon Knight, Frederik Pohl, Theodore Sturgeon, Lester del Rey and Judy-
Lynn Benjamin-del Rey, James Baen, and Jerry Pournelle. THIS WAS MY ALL-TIME FAVORITE MAGAZINE IN THE 1950s!
1950 October-Vol-1 No. 1 FAIR-GOOD Covers lesse,botten FC tat Simak'o Time Quarry (ptri), Sturgeon, MacLean,
Matheson's Third Free the Sun, Loibor, AoiMoVT
Brown, Willy Loy (micspotted on cover)
Simak, Leinster, Asimov, Ley, and a story
anticipating Star Trek's "transporters," by
12 years: LESTER DEL REY's "The Wind Between
the Worlda"
1986
November
March
January

No.54
No.58
416
William L. Hamling's magazine after leaving Ziff Davis, acquired from Ray Palmer. Never one of the "biggies"
of SF, but it had a loyal fan following from October 1950 to October 1958.
sue.
58
Swain, Neville, William Campbell Gault
St. Reynard, decamp, Milton Lesser
Swain, Knight, Venable, Galouye
Richard S. Shaver, St. Reynard, Phillips
Randall Garrett, Silverberg, E.Hamilton
$ 5.00
$ 5.00
$ 5.00
$ 4.00
50
MAGAZINE OF FANTASY & SCIENCE FICTION. THE [aka FANTASY & SCIENCE FICTION or F&SF]
In my view, this was the classiest magazine ever produced for a consistently "good SF&F read," issue after is-
It shunned Astounding's pomposity and Galaxy's self-glorification, turning out first-class SF while often matching the quality of Unknown 's fantasy. In that latter genre, it was matched (maybe surpassed) only briefly
by the first few issues of Fantastic. (This is not to sleight the masterful Weird Tales, but WT filled a unique
niche in a league of its own.) By the 1980s and after, while F&SF still ranked high, it no longer had that March
"leading edge" quality, having slipped too much into the general and crowded new wave/speculative fiction mold.
No.22 GOOD-VG small split, bottom of spine
Chesley Bonestell double-cover
FAIR-GOOD some FC tatter
FAIR-GOOD sm. tears/chips, stain, FC wear
Idris Seabright, Anthony Boucher, Manly
Wade Wellman, Tucker
March
418
VG but FC has mail label
N-VG
1986
April
419
N-VG
June
421
N-VG
August
423
VG
1987

April
431
N-VG
1988
June
May
September
433
N-VG
444
N-VG
448 N-VG
1989
1994
December
January
April
December
451
452
FINE (Contains 1988 Index)
FINE
455
VERY-FINE/MINT
528
FINE/Virtually MINT (1994 Index)
$ 4.00
$ 3.00
Cartmill, Asimov, Sturgeon
$ 2.00
J.B.PRIESTLY, SAKI, BRADBURY,Chas, Beaumont $ 4.50
ELLISON, Asimov, Algis Budrys
$ 2.00
James Tiptree, Jr.
$ 1.00
Robert F. Young, Damon Knight
$ 1.00
John Brunner, Michael Bishop, R.F. Young
ELLIRON, Isaac Asimov
$ 1.00
$ 2.00
Alan Dean Foster
Porges Orson Scott Card, R.F. Young
1.00
$ 1.00
ELLISON Asimov, Card, Tiptree
$ 2.00
BUDRYS Obit for Heinlein, Marion Zimmer
Bradley, Ron Goulart
$ 3.50
Harry Turtledove
$ 2.75

ELLISON, Card, Budrys, Asimov
$ 3.25
Asimov, A.D. Faster, O.S.Card
$ 3.00
RAY BRADBURY (New), ELLISON, ISAAC ASIMOV
(Posthumously) & JANET ASIMOV, LeGuin
$ 3.50
1953
1954
February
November
1956
March
29
50
65
NEAR-FINE a "keeper"
NEAR-FINE a "keeper"
GOOD by spine damaged/contents OK
Sheckley, Knight, Sturgeon Simak, Budrys
Sheckley, Simak, Willy Lex
Pohl, deCamp, Gunn, Gordon R. Dickson, Ley
$ 3.50
$ 3.00
$ 1.50
1994 Fail
1976
December
231
N-VG but taped spine
Pournelle, Pohl, Robinson
1977
March
234
April
235
May
236
N-VG but taped spine; mail label
VERY GOOD but taped spine; mail label
GOOD but FC damage, taped spine;
Greg Bear, Robinson, Pournelle
Eklund, Pournelle, Robinson, Irwin
$ 1.25
$ 1.00
$ 1.25
mail label
F.Herbert, S. Robinson, Richard Geis long-
1978
September
252
NEAR-FINE (published by UPD)

time fan, contributor to my fanzine 1953 $1,50
.75
MARION ZIMMER BRADLEY'S FANTASY MAGAZINE [Artsy 8 X 11 Perfect-Bound Slick]
25 MINT (Interview w/Ray Nelson, 50s BNF,
invented propeller beanie!
Darrell Schweitzer, Farke Godwin
$ 4.50
SPECIAL SUPPLEMENTARY LISTS: Classics Illustrated and Classics Illustrated Junior issues, some VG++ to F, others not
so lucky; most are HRNS but some still scarce. HOLLYWOOD-IANA: Motion picture books (the industry and the personali -
ties), movie premier books (large size HCs & SCs), photos, reference-rich magazines, and much more. Contact Vince
[AD] Nowell @ WORDSMITH/COLLECTOR, P.O. Box 1258, Simi Valley, CA 93062-1258 for free lists of condition and prices.
Still avail.
PAGE 7
PAGE 6

[PAGE BREAK]

The WORDSMITH Eclectic COLLECTOR
LAD
Issue No.4
The WORDSMITH Eclectic COLLECTOR
Issue No.4
MY
YEAR AND ISSUE
YEAR AND ISSUE
WHOLE
NO. CONDITION, ANY EXCEPTIONS & SIZE NOTES
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES PRICE
NEW WORLDS - Fiction of the Future / NEW WORLDS SCIENCE FICTION [United Kingdom]
Noya Publications (John Carnell, Editor) was formed by British fans in April 1949 out of frustration with having
It was an early
access only to U.S. reprint SF magazines and low-quality, erratically published U.K. attempts.
endeavor to provide better SF to British readers in non-pulp format. New Worlds merged in 1966 with its later-
founded (1952) companion, Science-Fantasy.
"Tall digest" size (5 X 8)
1954
NEAR-FINE
No. 6
No.16 NEAR-FINE
WHOLE
NO.
CONDITION, ANY EXCEPTIONS & SIZE NOTES
SCIENCE FICTION ADVENTURES [United Kingdom]
MY
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES PRICE
Founded 1958 as "action SF" companion to New Worlds and Science-Fantasy by Nova Publications

John Carnell).
late Larry T. Shaw as Editor in December 1956 and ended in June 1958.
It initially reprinted stories from Royal Publications (USA) Science Fiction Adventures, which began with the
May
By January 1959, the UK's SFA dropped
No. 8
U.S. reprints in favor of new British-authored stories. The magazine died with May 1963 ssue (#32).
SALES NOTE:
NEAR-FINE [NOTE: Mag began with V.2/#1.] 2 novels: 1 by Jay Williams, Clifford Reed $5.00
For LOT discount in combination with: New Worlds and Science-Fantasy, see Page 6.
November
$ 7.00
1959
$ 6,00
1950
1952
Spring
$ 6,00
July
$ 6.50
September
1953
January
No.17
No.19 FINE
NEAR-FINE
June
May
August
No.23
FINE (now published monthly)
No.21 FINE/Virtually MINT (now New Worlds Science Fiction) 1st stnd digest-sized issue
$ 7.00
1994
A. Bertram Chandler, C.M. Kornbluth
Wilson Tucker's "Wild Talent"
$ 6.50
$ 6.50
No.26
FINE
1955
April
No.34
NEAR-FINE to FINE
May
No.35
NEAR-FINE
1956 September
51
FINE
Isaac Asimov, Richard Wilson
John Brunner, E.C.Tubb, Kenneth Bulmer

Judith Merril, John Wyndham, E.C.Tubb
J.T.McIntosh, Brian Aldiss
$ 8.00
$ 6.00
1994
$ 5.50
October
$ 5.00
December
54
NEAR-FINE
J.T.McIntosh
$ 5.00
1957
February
56
NEAR FINE (new cover logo)
Kenneth Bulmer
$ 5.50
1982
March
57
FINE
Brian Aldiss, Richard Wilson
$ 5.50
July
61
FINE
September
63
FINE
66
N-VG
68
NEAR-FINE
$ 5.00
FOR $88.00 (>10% discount)
New Worlds LOT (the 17 issues enumerated abovet
New Worlds LOT combined with Science-Fantasy LOT-
FOR $103.00 (>12% discount)
New Worlds, Science-Fantasy LOTS and Science Fiction Adventures FOR $105.00 (214% discount)
John Brunner, E.C.Tubb, Kenneth Bulmer
15th World SF Convention Issue (London)
John Brunner
$ 5.50
$ 4.00
1952
1954
May
$ 7.50
(No. 1) FINE 8 X 11 slick
1958

December
February
SALES NOTE:
OMNI/ THE BEST OF OYNI SCIENCE FICTION [Magazine-style anthology, Ben Bova co-Ed.]
HARLAN ELLISON story
1980 Undated
OTHER WORLDS (aka OTHER WORLDS SCIENCE STORIES, et al)
Its first incarnation lasted until July 1953 (below). It
RAP's major work after leaving Ziff pavis' in 1949.
was reborn in 1955 combined with Universe Science Fiction, acquired by Palmer from Clark Publishing Co., famous
for its Fate Magazine, which ironically also was fathered by Ray Palmer (1948). Other World's history is a bit
cloudy, at best, but around 1957 it "evolved" into something called Flying Saucers from Other Worlds (still run-
ning a little SF), then went strictly UFO as Palmer left the science fiction field for good. (Good!)
1950 October Vol.1 No. 2 FAIR-GOOD FC top-rt corn miss, edges &
1951 September
first 3 pp chewed, browning, stain;
overall, tho' VERY READABLE Rare!
13 FAIR+/GOOD FC loosening, chew top edge,
BC some discolor, stain, browning,
past mildewing, chewing. READABLE!
VG (Rare magazine)
1953 July
31
May-June
No. 3
$ 4.00
V.3/#1 MINT (May be 13th issue.)
SCIENCE FICTION AGE [Mix fiction, articles, news, reviews; 83x11 perfect-bound, full-color slick.]
ELLISON, John Brunner Michael Resnick
SCIENCE FICTION CHRONICLE- The Monthly SF and Fantasy Newsmagazine
Founder/Publisher/Editor Andrew 1. Porter's successor (since 1973) to ALGOL and STARSHIP.
#177 MINT (15th Anniversary Issue as SFC.) Emsh cover; Porter reflects on SFC's hist $ 3.50
SCIENCE FICTION DIGEST [The Davis Publications "revival," and sister to then-Davis-owned Analog.]
VG (Vincent & son V.B. Price on monsters.) Michael Bishop "No Enemy But Time"
SCIENCE FICTION QUARTERLY [Columbia Publctns/"the last true pulp SF magazine"
A 1940s pulp revived after WWII, this mag finally died with the February 1958 issue. Whole no. based on 1940
first issue; for post-war series subtract 10.
August
(Worse yet, voy./# sequence began anew in May 1951.)
Alfred Coppel, Phillips, Lesser, L. Sprague
de Camp; Itrs: Judith Merril, de Camp
Charles Beaumont, Jerome Bixby, Damon
Knight; Robt Madle fan/SF news column
NOT PORNO.]
16 FINE Very collectible
23
NEAR-FINE
$ 3,75

James Gunn]
$ 5.00
$ 4,50
STAR REACH [Mike Friedrich, Editor/Publisher/b/w GF "adult comic"
Published mostly as a labor of love from mid 1975 until October 1970. Earlier issues are increasing in value
Format, both FINE, and gold only as a "SET" for $6.00..
(per Halley's 1995 edition of Comico Values Annual Those are the final two issues of this periodical in this
No. 18 FINE
No.17 FINE 82 X 11 3 color cover; Edgar Allen Poe's "The Raven" with b/w art by Joffrey Bonivort comt full cohen sever FC/BC by Leo Marro; contenter Marro, Macaichi Mukaide
STAR WARS GALAXY MAGAZINE [News/reviews/features centered around Lucasfilm's Star Wars.]
1970 July
October
News, reviews, features memorabilia ads, a comic section from Dark Horse, and a foldout poster.
Published by
Topps, 7 X 10 (approx comic book size), full-color, perfect-bound slick.
No. 1
PREMIERE ISSUE: EXTRA HALF-COVER.
VF tho slightly scratched FC from newsstand display.
Rog Phillips, famous Palmer editorial, short
Shaver feature (not by RS), fan news, ltrs
incl from future asst.editor Mahaffey
ROBERT BLOCH, E.F.Russell, Fredric Brown,
Willy Ley art. - rare outside Astounding
$ 7.50
at that time. Good author lineup.
Lyn Venable, L. Sprague de Camp, Don Wilcox long
$ 3.00
ltr on SF hist/interesting reply by RAP
1994
Fall
[AD] $7.50
1951 January
epitome of old-time space-opera SF.]
Mary Elizabeth Counselman, all-star issue
$ 6.00
1952
February
73
1951
November
FAIR-NBC, contents compit, great read!
1992
July
No.2
November
No.3
RAY BRADBURY CHRONICLES, THE ["Illustrated adaptations," i.e., "comics" - but classy.]
MINT! Come Into My Cellar; Rocket Summer & The Locusts; A Piece of Wood; and E.C.
Comics classic adaption: The Flying Machine, and others; Intro: R.B. $10.50

MINT! The Veldt; Gotcha!; Homecoming; The Aqueduct; and E.C. Comics classic
adaptation by Wally Wood: There Will Come Soft Rains; Intro: R.B.
May
76
N-NG
1954
[AD] $11.50
May
July
January
Fall
76
GOOD to N-VG
78
GOOD
92
95
PLANET STORIES [Always funky, but enjoyable as the
51 N-VG displays some wear, minor stains
ROD SERLING'S TWILIGHT ZONE MAGAZINE [Posthumous tribute to the late screenwriter/producer.]
1981 December
1982 September
October
1983
No. 9
18
FINE/Virtually MINT
NEAR-FINE except mail label
19
NEAR-FINE except mail label
July-August 27 MINT
September-Oct 28 MINT
66
FINE/Globo to MINT
$ 4.75
Tomorrow's Fact
STARTLING STORIES Scientifiction at Its Best and Today's Science Fiction
The infamous "thud and blunder" companion to Thrilling Wonder Stories (direct heir to Gernsback's 1929 "SF rein-
carnation" with his various Wonder magazines). It lasted 16 years (99 issues) from January 1939 to October 1955
under such editors as Mortimer Weisinger (a fan hired at age 21 from the first fan club, The Scienceers, New
York City), Oscar J. Friend, Sam Merwin, Jr., Samuel Mines, Fanny Ellsworth, and Alexander Samalman.
E.Hamilton "Capt Future" novelette, Raymond
Z.Gallun novel; Itri Lin Carter
M.St. Clair novel,C.Oliver, Fletcher Pratt,
Brackett, Ley, Jerome Bixby fan col.
G.O.Smith, St. Clair, Bixby, Russell
[Duplicate of above.]
1082 July

VG/tape cov edges; now trimmed sm.pulp
FINE/Nearly MINT-5th from last issue
Arthur C. Clarke, Miriam Allen de Ford
PHILIP K. DICK, W. Tucker novel, St. Clair
G.O.Smith novel, St. Clair, F.L. Wallace
0099
$ 2.00
$ 3.00
$ 2.75
$ 2.50
$ 4.25
$ 5.00
STEPHEN KING'S CREEPSHOW [Plume Books/Penguin, 1st Edition Illustrated Adaptation]
1 Shot NEAR FINE/Close to MINT (Based on Geo. A. Romero'o film) Arti Borni & Micholo Wrightson, cover by Jack Kamen; 81 X 11, opine, stiff covere, full color
$ 5.00
$ 3.00
$ 3.00
1970
Intryw: ELLISON, Gahan Wilson, Sturgeon
Sampler of Arthur Machen, Thomas Disch,
Rod Serling, Ron Goulart
Avram Davidson, Sheckley, Serling, Disch,
Goulart; interview with Nicholas Meyer
H.P.LOVECRAFT, S. Fawler Wright, G.Wilson $ 6.00
Will Stanton, Carol Serling, G. Wilson; color
$ 4.00
preview of Twilight Zone - The Movie
SCIENCE-FANTASY [United Kingdom] [See New Worlds for publisher historical data.]
1953 Spring
No. 6
NEAR-FINE "Tall digest" (5X 8)
No. 9 FINE (Standard digest size)
35
1954
July
1959
June
SALES NOTE:
FINE
J.T. McIntosh, E.C. Tubb, .F.Burke
A. Bertram Chandler, Aldiss. Tubb, McIntosh
Arthur C. Clarke, Fritz Leiber, Aldiss
$ 6.00
Science-Fantasy LOT (the 3 issues enumerated above) FOR $ 17.00 (>10% discount)
Fall
13
[AD] $15.00
$ 1.25
STRANGE FANTASY [Ultimate Publishing Co. reprint of Ziff Davis magazines.]
FAIR-POOR Corner FC missing; first 2pp John Brunner, Fritz Leiber, Clifford D.
missg but no critical contents lost Simak, Ron Goulart, Roger Zelazny

1951 Spring
TEN-STORY (10 STORY) FANTASY [Avon 1-shot ragged-edge pulp, Editor: Donald A. Wollheim.]
Arthur C.Clarke's precursor to "2001; Space
Odyssey," John Beynon (Wyndham), Derleth, Leiber,
van Vogt, del Rey, Kornbluth,de Camp, MORE $ 8.00
V.1/#1 GOOD+ (some water stain, minor damage
lower left FC & cover edges); All-
star issue, top writers/ONLY ISSUE!
[AD] $7.00 BOOK MALL OF VENTURA: 424 E. Main St., Ventura, CA 93001 / Ph-(805) 641-BOOK / FAX-(805) 643-4854
[AD] $6.00 Diane L. Neveu Rare, Collectible and Out-of-Print Books; Searches; Large SF&F Inventory.
PAGE 9
PAGE 8

[PAGE BREAK]

The WORDSMITH Eclectic COLLECTOR
Issue No.4
The WORDSMITH Eclectic COLLECTOR
Issue No.4
YEAR AND ISSUE
WHOLE
NO. CONDITION, ANY EXCEPTIONS & SIZE NOTES
THRILLING SCIENCE FICTION [Ultimate Publ. Co., digest reprint of Ziff Davis magazines]
1974
October
December
FINE/Near-MINT
FINE/Near-MINT
WHOLE
NO. CONDITION, ANY EXCEPTIONS & SIZE NOTES
NY
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES PRICE
Bova, Silverberg, Laumer
Moskowitz, Fairman, Bova, Banks
$ 2.00
[AD] $2.00
YEAR AND ISSUE
1988 Summer
Fall
1988/89 Winter
1989 Fall
Winter
#291 MINT
#292 MINT
[AD] $293 MINT
#294 MINT
#295 MINT
$ 8.00
$ 5.50
1990 Spring
Summer

Fall
[AD] $296
MINT
#297
MINT Cover & art by Kelly Freas
1990/91 Winter
1991 Spring
[AD] $298
[AD] $299 MINT
MINT
#300
MINT
Evan Hunter, Rog Phillips, Alan E. Nourse
$ 2.00
THRILLING WONDER STORIES [The "classier" companion to Startling Stories.] - PRICE CUTS!
1945
1952
Spring
VG slight roll but bright; Bergey cov
July BRITISH No.5 VG - some tape on spine (*No. in UK)
Kuttner Sam Merwin, Rocklynne, Kummer
Fletcher Pratt's "Double Jeopardy"
UNIVERSE SCIENCE FICTION [Fifth issue under editorship of Ray Palmer]
1954 September No. 7 N-VG
UNKNOWN [aka UNKNOWN FANTASY FICTION / UNKNOWN WORLDS FANTASY FICTION]
Any reader/fan/collector is cognizant of this now-rare, highly acclaimed, much-sought-after, and too-short-lived
"Born" in March 1939, it lasted only 39 issues to October 1943, when
This fantasy gem of Street & Smith Publishing Co.
companion to Astounding Science Fiction.
it fell as one of SF's casualties of WWII paper shortages.
and John W. Campbell, Jr. was often emulated, nearly matched, but never bettered.
L. Sprague deCamp; Thomas Calvert McClary
[AD] $20.00
A. Beeter: del Rey/Leiber/Sturgeon; V.Vest $20.00
1940 June
1942 August
No. 4 FINE (*British Edition)
32 FINE bedeheet/a real collectiblel
UNKNOWN WORLDS OF SCIENCE FICTION [Illust adapt ("comics") of name-authors' stories.]
1975
May
No. 3
NEAR-FINE (Third of six issues.)
Very classy magazine!
HARLAN ELLISON "'Repent, Harlequin,' Said
the Ticktockman", Niven, Herbert, Shaw
$ 5.00
VARGO STATTEN SCIENCE FICTION MAGAZINE [United Kingdom] aka: VARGO STATTEN BRITISH SCIENCE
FICTION MAGAZINE/BRITISH SCIENCE FICTION MAGAZINE / BRITISH SPACE FICTION MAGAZINE

Vargo Statten Science Fiction Magazine - "New Worlds to Conquer" (subtitle after first issue) was launched by
Scion, Ltd. in January 1954. Editor Alistair Paterson took the mag through several title changes until Scion
It was picked up by Scion's printer Dragon Publications, while John Russell Fearn (who SF histor- collapsed.
After 19 irregularly published
ians say WAS "Vargo Statten") got masthead credit as Editor (November 1954).
issues the mag (as British Space Fiction Magazine aborted in February 1956 due to a printers' strike.
"All-new/all-British" stories by E.C. Tubb,
No. 1 NEAR-FINE Same cover art/logo RC & BC
"Vargo Statten," et al
[AD] $12.00
Statten, Tubb; lots of fan news; autobiog Walt
No. 3 NEAR-FINE Same cover art/logo FC & BC
Willis of N. Ireland (well-known in US) $12.00
VARGO STATTEN SCIENCE FICTION MAGAZINE "SET" - Both Issues Above for: $20.00
1954
January
March
VERTEX The Magazine of Science Fiction
1974
1975
In its inception, this relatively short-lived (1973-75) avant-garde science-fact/science-fiction periodical somewhat resembled the soon-to-follow OMNI in style and format, and could pass as a precursor to Science Fiction
Age. However, by the third anniversary issue the slick-coated interior paper had been dropped for a semi-news-
Near its end, Vertex was published in a sort-of tabloid newspaper format. Overall, an interesting print).
experiment, and a good example of the ongoing evolution of SR magazine publishing.
HARLAN ELLISON, Ted White, John Brunner, Poul
No. 8 NEAR-FINE - Barely misses "FINE"
Anderson, Silverberg, Piers Anthony
This issue emphasizes science
June
February
April
12 FINE
13 FINE Interview with Judy-Lynn del Rey%; photo preview of movie Earthquake
$ 6.00
$ 5.00
$ 5,00
WEIRD TALES [Issues from the last three resurrections of this legendary magazine.]
The history of the venerable Weird Tales is too well known to repeat here. After the original magazine died
in September 1954 there followed not one, not two... but FOUR revivals. The first one below, pb size, is the
FIRST ISSUE from Zebra Books, edited by the late Lin Carter. The next one below (#289) is the very scarce (be-
cause it was not well distributed) second issue of the two "illegal California WTS," published by Brian Forbes

(who autographed the issue available here). The remaining issues below are the Terminus Publishing revival put
out by John Betancourt, Darrell Schweitzer, et al. At the end of 1993, with issue No. 309 (which I do not have),
Terminus' right to the name/logo Weird Tales was revoked by the copyright holder, Robert Weinberg. In a tele-
phone conversation with him, he told me that Terminus failed to keep up their royalty payments, and that he
didn't mind pulling the name back as he was working on a deal for a WT movie - this in late 1994.
SALES
NOTE: "MINT" means exactly that; I've kept these in unread, pristine storage.
1881 Spring
#284 MINT (Zebra Booke printed "No.1" on FC) A NEW Re
A "blockbuster" loquel PRICE GUTI
1985 Winter
9289 FINE (Signed by Publisher, Brian Forbes)
artwork on cover: Ed. Mark Monsete
02 x 11 "stick" magazine, beautiful
1988
Spring
[AD] $290
MINT/AUTOGRAPHED BY GENE WOLF
65th Anniv Iss (7x10 slick)
Derlethr
at E. Howard story,
HANNES BOK, Tanith Loo, Itrol Ray Bradbury
Rebt Blech, Ted Sturgeon, & Sam Meekowitz-$15,00
ROBERT BLOCH, Stanton A. Coblentz, William f
Temple, Aivan Vost, and John trost
PRICE OUTH
-925.00
Gene Wolf Issue, Arthur Lloyd Eshbach, Tanith
Lee, Darrell Schweitzer PRICE CUT!
[AD] $20.00
Summer
Fall
GONE
#301
MINT
#302 MINT
1991/92 Winter
1992 Spring
1993 Spring
#303 MINT
#304
MINT
[AD] $306
MINT (Went to 8x11 w/#305 issue)
Summer
#307
MINT
CONTENTS/AUTHORS/SPECIAL-INTEREST NOTES

Tanith Lee Issue; Harry Turtledove
Interview with Clive Barker
Avram Davidson Issue; Robert Sheckley
Reginald Bretnor
Robert Sheckley
Harry Turtledove
JOHN BRUNNER
STEPHEN KING, R.Bretnor, Fred Chappell
William F. Nolan
MY
PRICE
[AD] $10.00
$ 8.00
[AD] $8.00
$ 8.00
8.00
[AD] $7.00
$ 8.00
[AD] $10.00
$ 8.00
ROBERT BLOCH 18SUE; ROBERT BLOCH-HENRY KUTTNER
story, RAY BRADBURY (Poem), Gahan Wilson art-
work
PRICE CUT!!
ROBERT BLOCH, STEPHEN KING
WILLIAM F. NOLAN ISSUE: ROBERT BLOCH
Tanith Lee
[AD] $20.00
[AD] $18.00
[AD] $12.00
$ 7.00
JOHN BRUNNER ISSUE: Tanith Lee PRICE CUT! $ 9.00
Nina Kiriki Hoffman Issue; Lord Dunsany,
Tanith Lee
Ian Watson Issue; John Brunner
$ 7,00
SALES NOTE PRICE CUT!! AII 19 WEIRD TALES issues above can be purchased as a LOT FOR $200.00 $185.00!
1953 February
WONDER STORY ANNUAL [Standard Magazines, not Lualdi's
No. 4 N-VG
EMSH Cover
Ed:9.Mines
- crease up.rt FC, slight roll,
some wrinkling, BUT pages are
bright and clean (N-F)
revived Wonder Stories in 1957 & 1963.]
ROBERT A. HEINLEIN's "Jerry is a Man", RAY
BRADBURY, Williamson, Kuttner, Asimov,
Oliver Saari, Zagat, Brown, Samuel Mines $ 7.50
WORLDS OF TOMORROW [Galaxy Publishing Co., Frederik Pohl, Editor]
1963 April

1964 November
1965 March
V+1/01 VG
10 N-VG
12 NEAR-FINE
SECTION II.
AVAIL.:
Clarke, Leinster, Loiber
A. Bertram and Susan Chandler
$ 3.00
Brian Aldiss, Larry Niven, Ron Goulart
$ 3.50
SCIENCE FICTION ORIGINAL ANTHOLOGIES ("MAGAZINES" IN PB FORMAT)
SALES NOTE: Also see Destinies (closeout) listed on Page 5.
[AD] CONTINUUM [Berkley - Roger Elwood, Editor/4 vol: 1974-1975 Complete Set (Underlined Below) @ $5.25
No. 1 GOOD+ (sp.creases) DEAN KOONTZ, GENE WOLF $1 /////// No.1 NVG (minor chips, creases) HCCAFFREY, PANGBORN $1.50
No.2 NVG- (scrape up.rt FC) FARMER, CHAD OLIVER $1.25 //// No.3 NVG (small sp.creases) WOLF, SCORTIA, ANDERSON $1.50
No.4 VG (tiny creases) CLIMATIC VOL: BARRY MALZBERG, ANDERSON, OLIVER, MCCAFFREY, PANGBORN, FARMER, SCORTIA $1.75
INFINITY [Lancer Robert Hoskins, Editor / "New Writings in Speculative Fiction" Both: $2.25
No.2 ('71) GD (crease) CLARKE, GUNN, NOLAN, SILVERBERG $1//// No.4 ('72) VG KOONTZ, LEIBER, MALZBERG, JAKES, GOULART $1.50
ORBIT [Berkley - Damon Knight, Editor All three books: $5.00
No. 7 FINE (Bagged; 1970) CAROL EMSHWILLER, GENE WOLFE, GARDNER DOZOIS, KATE WILHELM, LAFFERTY, DISCH, KEITH LAUMER $3.50
No.9 GOOD ('71) WILHELM, NEVILLE, V.VINGE, LEE HOFFMAN $1.25//No. 11 FAIR (cov. loose; '72) POHL, FARMER, DANN, HALDEMAN $1.00
STELLAR [Ballantine - Judy-Lynn del Rey, Editor Buy #1 (NVG), 82, 84all for $7.00
No.1 FAIR (74; creased) CLEMENT, NIVEN, ROTHMAN, GINAK $1.00//No.1 NVG (1974) DICKSON, FOSTER, LAFFERTY, SILVERBERG $2.00
No.2 VG+ (1976) ASIMOV, CONNER, HALDEMAN, SIMAK, NIVEN $3.00//No.4 VG Hrd Cyr 78/BC/(DW sp. fade) TIPTREE, FOSTER, BOVAS3.00
(No.5 VGA (1980) MARTON ZIMMER BRADLEY, PHILIP K. DICK, G. C. EDMONDSON, JAMES P. HOGAN, CHARLES SHEFFIELD more $3.00
SOLD
STAR SCIENCE FICTION [One of the first pb "magazine" anthologies; Fredrick Pohl, Editor]
No-1 VG (very slight edge chipe) (4th pro11/72) BRADBURY, DEL REY, GOLD, CLARKE, KORNBLUTH, KUTTNER-MOORE, LEIBER, more $2.50
No.2 GOOD- (sp.cracks, creases) 1ST ED Ballantine 1953 BESTER, WILLIAMSON, BOUCHER, PRATT, CLEMENT, STURGEON, BUDRYS $2.00
UNIVERSE [Ace - Terry Carr, Editor] All three books below for $5.75
No. 1 GOOD+ (sp.crease; BC dirt) (1971) BENFORD, TUCKER, MALZBERG, PANGBORN, SILVERBERG, GOULART, EKLUND, LAFFERTY, more $1.50
No.2 NVG (minor crease FC, creases BC) (1972) HARLAN ELLISON, DOZOIS, BOB SHAW, GENE WOLFE, ROTSLER, RUSS
No. 5 VG Random House HrdCvr/BC/DW (sm. tear) (1974) LeGUIN, WOLFE, NEVILLE, LEIBER, PANGBORN, EFFINGER, BUSBY
SECTION III.
These are all that are left!

MAGAZINES FOR UFO ENTHUSIASTS
[AD] $2.00
[AD] $3.00
All items are NVG or better condition unless otherwise stated. Each item is $1.00. Not plastic-bagged.
UFO REPORT: Summer, Fall 75; Aug, Sep 77 June 78*; Feb 79; by Editors of Saga Magazine 8 X 11 slick, claiming to be
"World's #1 UFO Magazine"; incl other mysteries: Bermuda Triangle, Big Foot, Nostradamus
OFFICIAL UFO: July 76 - 8 X 10 predecessor to Ancient Astronauts, but less flamboyant.
FLYING SAUCERS-UFO REPORTS: Oct 1967-8 x 11 true-slick pre-Apollo-moon-landing "space mysteries" magazine.
*June 1978 has loose cover, but intact
**Corner of BC missing.
PAGE 10
PAGE 11

[PAGE BREAK]

Issue No.4
The WORDSMITH Eclectic COLLECTOR
The WORDSMITH Eclectic COLLECTOR
*Only ones left
ACE DOUBLE NOVELS - All at MOVE-'EM-OUT PRICES!! These are NOT BAGGED.
As part of a large trade, I acquired many pbs, including the ACE DOUBLE NOVELS below. (The other pbs are
SECTION IV.
listed accordingly with sf&f pbs.) with no other notation, they are GOOD (or better) @ $1.00 each (3 for
All show wear; where duplicates are listed
[AD] $2.75); otherwise, if marked "FAIR," 75¢ each (3 for $2.00).
and are
in quasi-equal condition, I'll select unless you dictate otherwise.
-107 Brackett, Loight Alpha Centauri or Die and Wallis, G. McDonald: Legend of Lost Earth
+ 242 Brunner, Johni The Rites of Cho And Brunner, Johni Castaways world
76096 Bulmer, Kenneth: The Ships of Durostorum and Sutton, Jeff: Alton's Unguessable
Both c.1963
Both c.1963
Both c.1970
Issue No.4
SECTION VI. OTHER MAGAZINES/PULPS (MYSTERY, LITERARY, ROMANCE, & GENERAL)
A. THE MYSTERY GENRE THINGS OF POSSIBLE INTEREST TO SF&F FANS PRICED TO SELL!!
ALFRED HITCHCOCK'S MYSTERY MAGAZINE [With "Mystery Classics" by literary/crossover authors.]
FC creases. Individual issues priced @ $1 each OR 3/$2.50!!
Overall range FAIR to NVG, but some FCS marred by mailing label, and a few have creased/bent corner pages and/or
FR sp damage Francis Lynde (1912)
GD mail label
GD mail label
NVG
1987
January
March
May

June
Both c. 1971
August
G-606 Carter, Lin: (FAIR/inked) The Man Without a Planet & Rackham, John: Time to Live(corn. bent, crease) Both c. 1966
M-131 Bulmer, Kenneth: [SEE M-131: Reynolds, below]
*-606 Carter, Lin: (FAIR/worn) The Man Without a Planet & Rackham, John: Time to Live (scraped, creased) Both c. 1966
606 Carter, Lini (NVG nice) The Man Without a Planet & Rackham, John: Time to Live (spine slight chip) Both c. 1966
M-109 Edmondson, G.C.: Stranger Than You Think & Edmondson, G.C.: The Ship That Sailed the Time Stream Both c.1965
13085 Kamin, Nick: (NVG) The Herod Men and Rackham, John: Dark Planet (top right FC corner bent)
Plague Ship (c. 1956) & North, Andrew: Voodoo Planet (c.1959) (sp. slight wrinkled)
& North, Andrew Voodoo Planet (bott.rt.corn.miss; crease)-
Phillifent, John T.: Hierarchies (1st ed)
Both c. 1973
Reynolds, Mack: Computer War (1967)
Ace prntg. 1973
Inherit the Earth (Hanke cover) Both c.1966
Inherit the Earth (Hanke cover) Both c. 1966
Behold the Stars (creases) Both c. 1965
Behold the Stars (orong09) Both 0.1966
Behold the Stars (creases) Both c.1965
G-580 Reynolds, Mack:
D-345 North, Andrew:
D-345 North, Andrew: (FAIR) Plague Ship (")
and
Mister Justice (1st ed)
53415 Piserchia, Doris
11650 Reynolds, Hack: (NVG) Code Duello (1968)
Dawnman Planet (Gaughan cover) & Nunes, Claude:
Dawnman Planet (Gaughan cover) & Nunes, Claude:
Bulmer, Kenneth:
Planetary Agent X
Planetary Agent X
Planetary Agent X
and
G-580 Reynolds, Mack:
131 Reynolds, Mack: (FAIR)
+101 Reynolds, Hack: (FAIR)
MYSTERY NOVELS:
& Bulmer, Kenneth+
Bulmer, Kenneth:
131 Reynolds, Mack: (FAIR)
77785 Ruccoll, Eric F, (FAIR) Six Woride Yonder (56) & Auscell: The Space Willies (54 55-56) (creases)
The following the books are priced at 504 each due to their generally very worn and/or incomplete condition,
271 Tubb, E.C.: (FAIR) The Winds of Gath & Coulson, Juanita: Orisis on Cheiron (incomplete miss. 6 pp) Both c. 1967
631 Van Vogt, A.E.: (Very Horn) The World of Null A (1945/1940) & Van Vogt, A.E.: Universe Maker

(c.1953) (tattered)
F-130 Howard, James A.: The Bullet-Proof Martyr (c.1961) & Flynn, J.M.: The Screaming Cargo (c. 1962) (sm. bend, creases)
SECTION V. SCIENCE FICTION AUTHORS' ORIGINAL MAGAZINE MANUSCRIPTS-PRICE CUTS!
Authors' typed mss w/original paper clips (rusted) and editor's marks, in plastic bags.
RAYMOND F. JONES "The Moon is Death" published in Future Science Fiction (March 1953, available on Page 4) $15.00
OPECIAL OFFER. Buy the Jones as and the issue in which it appeared for the ecmbined price of $17.501
MICHAEL SHAARA [now famous for The Killer Angels, produced for PBS as Gettysburg] "Wainer" bought 9/23/52
for Galaxy Science Fiction Magazine; has editor's typed blurb cover sheet.
[AD] $25.00
NVG
1989 January
Booth Tarkington (1925)
Richard Stern (1959)
F.Marion Crawford "The
Screaming Skull"; Doug
Allyn White "Witch"
Bruce Scates (SF)
February
March
April
May
June
July
August
October
September GD mail label Freeman W. Crofts (1921)
GD mail label
November GD mail label Stacy Aumoniere (1927)
December NVG
L.T.C. Rolt (1948)
MID-Dec GD mail label John Steinbeck "How Mr.
Hogan Robbed a Bank" ('56)
O. Henry (nd), David Braly
A.MERRITT "The Pool of the
Stone God"
GD+ label; FC
some wrinkles Grant Allen (1896-97)
GD mail label Ring Lardner (1928)
NVG
BILL PRONZINI
GD-NVG
GD-NVG
GD label; FC
some wrinkles
NVG
NVG
September NVG FC some
wrinkles
NVG

A.A.Milne of Pooh (1950)
Guy de Maupassant (1926)
FRANK STOCKTON classic
WILLIAM HOPE HODGSON (nd)
Margery Allingham (1941)
Mrs. Oliphant "The Open
Door"
October
Dorothy L. Sayers (1933)
December GD mail label Alfred Noyes (1918)
WNTR/Dbl Iss GD-NVG
1990 January
GD mail label Charlotte Armstrong (1953)
February GD FC some R.Austin Freeman "The Magic
wrinkles Casket"
1988
January
February
GD mail label
FR-GD m. label
March
April
June
GD mail label
GD mail label Dorothy L. Sayers (1928)
GD mail label
March
GD
July
NVG
August
GD mail label May ("The Grinning God") &
Jacques Futrelle ("The
House That Was")
April
December
September GD mail label Margery Allingham (1939)
November NVG m. label H. G. WELLS "The Man Who
Could Work Miracles"
GD mail Tabel Anon: "The Great Valdez
Sapphire" (1908)
June
July
1988
Robert Louis Stevenson "The
Bottle Imp™
GD mail label ISAAC ASIMOV - a "Batman"
story
GD mail label
GD-NVG
Georges Simenon (1944)
MID-Dec GD+ m. label MALCOLM JAMESON "Train for

Flushing™
Carlton Carpenter
EDGAR ALLEN POE "The
Black Cat"
1987 December #537 Digest
ELLERY QUEEN [ELLERY QUEEN MYSTERY MAG] NVG; most FCs have mail label. $1 each OR 3/$2.50!!
Mid-Dec #538 Digest
January #539 Digest
February #540
Digest
March
#541
April #542
1988
Index to Vol.90
September #547 Digest
October #548
Digest
Antonia Fraser
47th Anniv/ISAAC ASIMOV
Digest
May
June
August
Lillian Jackson Braun of
"The Cat Who..." fame
#543 Digest STEVE ALLEN; MARK RUS-
SELL; "MISS MANNERS"
#544 Index V.91/ASIMOV; A. Fraser
#545 Digest REGINALD BRETNOR
#546 Digest
1989
November #549 Digest
December #550 Digest
Mid-Dec #551 Digest
January #552 Digest
LORD DUNSANY
February #553
March
#554
VG/no label
"ROMANCE AMONG THE
THEM ALL-SINGING, ALL-DANCING CINEMATIC PULPS
I
Ah, yes, gimme that ol'-time adventure.
mean Lucasfilm's technically enhanced reviv-
als of Star Wars, The Empire Strikes Back,
and The Return of the Jedi.
If you are too young to have seen them other
than on a 19" screen, you must go - nay!
RUN to your nearest movie house and experi-

ence these flicks. And if you did see them
in a theatre before, you've gotta do it
again!
Here're Amazing Stories, Wonder Stories, and
Planet and Startling all brought to life
before your eyes
and ears. It was worth
the popcorn cholestoral risk to once again be
enraptured by THX sound and widescreen blood-
and-thunder space opera. Just as in 1977,
Star Wars etc. brought back to mind the first
science fiction novel I ever read: Jack Will-
iamson's The Legion of Space.
Referring collectively to the trilogy, Star
Wars is, as an engineering associate at West-
inghouse/Cleveland said about Robocop, "the
last movie I saw that I understood.' Well,
not really, but you get the idea. There's no
hidden message, no deep mystery, no mysticism
(in spite of what subsequent writers have
tried to insinuate about the Darth Vader/Luke
Skywalker relationship). It's just pure, un-
adulterated fun!
And if SF pulpism-qua-movies isn't all to
your liking, then go rent any Indiana Jones
movie (especially Raiders of the Lost Ark),
or Tom Selleck's High Road to China, or Ro-
mancing the Stone (but not its sequel).
This cinematic "rush" is the same kind of
stuff that many writers tried to live on at a
half-cent a word, when they got lucky, in the
1920s, 30s and 40s. It is the fundamental
matter of that field of literature we adopted
at some point in our lives, one way or anoth-
(Otherwise, why are you reading this?)
er.
It is to today's speculative fiction what the
late Carl Sagan's free-electron white-noise
is to the Universe. It's part of us and our
lives. So enjoy it to its maximum.
EDWARD MCMANUS
1939
July
Index to Vol.92
Nan Hamilton "Too Many
Pebbles,
story
1st Sam Ohara
NVG/48th All-Star Anniversary
Issue: ISAAC ASIMOV
PULPS!"-Three FINE examples of what ladies swooned over in the 30s.
Beautiful copy!!

[AD] $25.00
Frank A. Munsey's ALL-STORY LOVE TALES - WEEKLY
January 7 LXXXI/#2 FINE++ Bagged Very rare pulp
Street & Smith's LOVE STORY MAGAZINE ILLUSTRATED
Technically this long-lived pulp is simply Love Story, but my mother, addicted to these early romance stories,
always called it "Street and Smith's Love Story, and so wLL, to honor her memory. Its mainly female readers
1938 April 16 CXLI/#3 FINE
got serials, novelettes, short stories, and poetry, plus astrological and other features. Plastic-bagged.
A real collectible!
June 25
Rare pulp/130 Inside pages
FINE
Rare pulp/130 inside pages
SALES NOTE: Both Street & Smith issues available at LOT PRICE = $27.00
GXLTI1/#1
A real collectible!
[AD] $15.00
[AD] $15.00
All three issues above for $50.00
CALL HIM LEGEND The Pseudonyms of Ray Bradbury
■Doug Rogers Ron Reynolds ■Guy Amory
•Anthony Corvais ■E.Cunningham
Cecil Claybourne Cunningham
Brian Eldred D. R. Banet
.D. Lerium Tremaine Edward Banks
Spaulding
William Elliott Brett Sterling' Leonard
■Leonard Douglas Douglas Spaulding (the lead character's name in Dandelion Wine, incidentally)
[from the Internet: Johnston@On-Ramp.com. Suggest also looking at the Ray Bradbury Page on the World Wide Web.]
PAGE 12
PAGE 13

[PAGE BREAK]

Issue No.4
The WORDSMITH Eclectic COLLECTOR
SOMETHING
BRADBURY
Encounter of Thrilling Wonder with the Most
DANDELION WINE. The words were summer on the tongue.
The wine was summer caught and stoppered. And now that
Douglas knew, he really knew he was alive, and moved
turning through the world to touch and see it all, it
was only right and proper that some of his new knowl-
edge, some of this special vintage day would be sealed
away for opening on a January day with snow falling
fast and the sun unseen for weeks or months and per-
haps some of the miracle by then forgotten and in nee
Since this was going to be a summer of

unguessed wonders, he wanted it all salvaged and la
beled so that any time he wished he might tiptoe down
in this dank twilight and reach up his finger tips.
Ray Bradbury, Dandelion Wine, 1957
of renewal.
Ray Bradbury, Ventura, CA, March 1,1997.
- I finally met this man, this writer
SO IT WAS on a sun-filled March premièr - - a vintage day
who inspires me, even influenced my destiny some forty-six long years ago. Figuratively, I grew up with Ray Bradbury. But as I stood at the table, my books and magazines held out as in offering for his consecration, my hair now as silvery as his, I did not tell him that. Now those signed publications shall be sealed away for opening on another day, and another, all salvaged and labeled, so that like Douglas Spaulding, I too might tiptoe and reach up my finger tips.
From my collection (and my duplicate trade inventory) I brought two copies of Astounding Science Fiction dated April, 1939. In the Brass Tacks section is a letter from a self-described
He was Librarian for the then-Science Fiction League
"amateur writer," Ray Douglas Bradbury.
After his remarks to John W. Campbell, Jr. about the stories and artwork ir
of Los Angeles.
prior issues, he foretold that soon he would deluge John
Campbell with manuscripts. That brash prophecy would take
more time to be fulfilled than Bradbury expected, however.
He was quite pleased to see these. Reading through the
' entire letter, he remarked at how difficult it had been to
sell fiction, how little it paid. That led him to the subject of what an author in the "golden age" years of the
40s-50s would do to get his work in print.
"I helped start Playboy, you know," he told us. "Hugh Hefner was trying to get the magazine started and didn't have
much money. He asked me if I'd contribute stories. I did,
and they ran in the earliest issues.
The stories he sent Hefner were, as he put it, too potentially controversial for the more standard markets, that being the McCarthy era.
"And we all know what a [expletive]
he was! Bradbury added.
He cited payments of a couple hundred dollars, low by today's rates, but good for the mid-50s.
VAIL
Nowell (1.), owner John Mil
ler (standing) and Bradbury
The WORDSMITH Eclectic COLLECTOR
THIS
Issue No.4
WAY COMES An Astounding
Fantastic Science Fictionist on This Planet!
THIS SIGNING was occasioned by the release of a new
edition of The Martian Chronicles (hardcover by
Avon, of all publishers).
This is my second signed
MC copy, my son having obtained one for my birthday

several years back.
I bought Dinosaur Tales, which Bradbury signed with a sketch of a tyrannosaurus rex. My remark that, like Damon Knight, he was an "artist" as well as a writer led to more nostalgia, as did his signing my February 1951 Galaxy, featuring "The Fireman," predecessor to Fahrenheit 451. "That's the temperature at which book paper burns," he reminded us, lest we had forgotten.
He not only graciously consented to photographs but also videotaping. He told Carole, my wife, as she aimed the camcorder, "Go ahead, if you want to waste it on me. Wasted on Bradbury? Never! The photos and video are new treasures, vintage Dandelion Wine for opening on many another day.
VINCE NOWELL

TWO NEW "GOLDEN APPLES"

Bradbury signs April 1939 Astounding containing his letter to the editor when this 18-year-old self-described "amateur writer" was still two years away from his first story sale. The issue is available. (See page 5.)

FROM RAY BRADBURY

Ray Bradbury: Zen in the Art of Writing, Joshua Odell Editions, Santa Barbara, CA, 1996, 176 pp, trade paper, $11.95
Ray Bradbury: Dinosaur Tales, Foreword by Ray Harryhausen, Introduction by Ray Bradbury, various illustrators, Barnes & Noble Books, NY, 1996, 144 pp, cloth, DW, $20.00.

Zen is not just a book for writers, but for thinkers who would be do-ers! A wonderful ice-cream-suit romp through the world of Bradbury's imagination, from the child who dared to grow up and remember what that child saw, heard, tasted, felt, to the adult observer of the world and people, who breathes life into book paper. Mr. Bradbury explains why Dandelion Wine, how The Martian Chronicles, and for whom Something Evil This Way Comes. Read it with a receptive mind. Lots of fun!

Tales has Mr. Bradbury's behemoths, from the lonely beast in "The Foghorn" to the hunted creature in "A Sound of Thunder, W
and all the others in between. Yeah, you've probably read them before, and most have been anthologized, but that doesn't detract a bit from the delight of having these four tales and two poems, all so wonderfully illustrated by Gahan Wilson, Moebius, Steranko, David Wiesner, and others, between two hard covers. Get it! Read it! Enjoy it!

Give it to someone you love, or better yet, KEEP IT!

Thanks to Owner John Anthony Miller and Manager Katie Crawford of the PHANTOM BOOKSHOP. 451 E. Main St., Ventura, CA 93001. for sponsoring the signing, and providing the oppor-
[AD] tunity to meet Ray Bradbury, Call (805) 641-3844 [fax (805) 641-1246] or 1-800-99-PHANTOM for availability of these books (or anything in the stf/horror categories). Also check out their gorgeous web site: phantom@phantoms.com. Please tell 'em where you read this.

[PAGE BREAK]

AUTHOR
FIRST NAME
BOOK TITLE
The WORDSMITH Eclectic COLLECTOR - Issue No.4
{Book Code: P.18}
PAGE 18
SECTION VII. PAPERBACK & HARD-COVER BOOKS - Condition codes for all books are as follows:
FINE = Read once but LOOKS NEW
MINT = Pristine/NEVER READ (pers.collectn.) VF = Near new/NEVER READ
ND NEAR-FINE/looks great! but had some use VG = Aver for age/COLLECTIBLE NVG = Shows wear/sm. problems
GD = GOOD/reader copy/shows wear &/or damage FR = FAIR/rough but readable POOR = As denoted/bad conditn
+/- = -gr up/down = very minor blemishes X = More pronounced wear/tear DW condition (HCS) noted separately
A. SCIENCE FICTION / HORROR PAPERBACK BOOKS
CATEGORY PUBLISHER/EDITION/YEAR
The WORDSMITH Eclectic COLLECTOR - Issue No.4
{Book Code: P.18}
AUTHOR
FIRST NAME
BOOK TITLE
CATEGORY
PUBLISHER/EDITION/YEAR
PAGE 19
COND PRICE
Koontz,
Dean
Dark Rivers of the Heart
FANTASY
Koontz,
Dean
Ballantine Ist US pb, 1995 Ver
Koontz,
Dean
Kotzwinkle,
William
COND PRICE
Lewis,
C.S.
Strange Highways [2 novels+ss]
Strangers
E.T. The Extra-Terrestrial [from screenplay]
Both volumes below (#2 & #3 in trilogy)
SF&F
Warner 1st pb, 1996
VG 3.00
SF/HORROR Berkley
GOOD 2.50

SF-vj
Berkley 6th pr, 1982
VG
3.00
Lewis,
C.S.
SF/CLASSIC [VINTAGE]
10.00
Perelandra [#2 in trilogy] [VINTAGE]
Lewis,
C.S.
SF/CLASSIC Avon 1st pb #277, 1950
VG
6.00
ACE DOUBL NOVEL See Page 12.
SF&F
SF&F
Lofts,
Norah
Gad's Hall (VINTAGE)
That Hideous Strength (#3 in trilogy) (VINTAGE)
SF
Macmillan 1st pb, 1965
NVG
5.00
TERROR
Fawcett Crest, c.1977
VG+
4.50
Lofts,
Norah
ANTHOLOGIES-PB See Page 11.
Amis,
Kingsley
New Haps of Hell (Analysis of SF) (VINTAGE)
SF/HISTORY Dallantine c. 1960
Haunting of Gad's Hall, The (Sequel]
TERROR
FR 2.06
Fawcett Crest 1st pr, 1980 GD %
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The Old Priory
TERROR
Avon 1st pr, 1983
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Piers
A TRILOGY: Incarnations of Immortality [below]
FANTASY-vj

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London,
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Anthony,
Piers
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#2 Incarnations of Immortal
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#1 Incarnations of Immortality FANTASY-vj Ballantine/Del Rey 6th, 1986 NF
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Sam J.
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Isaac (Ed.)
S.Williams, Ed.
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Fawcett Crest pb, 1975
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Science Fiction by Asimov (llustrated-Hank Jankus] SF/CLASSIC Davis Publ/thin dig.pb,nd
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James
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Bradbury,
Ray
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Duane/Morwood, Diane & Peter
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Sir John et al The Third World War: August 1985
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Brian
Helliconia Spring [Vol 1]

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Atheneum, BC ed, 1983
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James
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GOOD 2.50
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Brian
The Helliconia Trilogy [3v set]
SF
FANTASY
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Anderson,
Poul
The Avatar
SF
Atheneum, BC ed, 1985
Atheneum, BC ed, 1982-3-5
Berkley
MINT DW sm.chips,wrnk 8.50
MINT
24.00
FANT/CONAN Prestige Ace 1967
NVGW 3.50
Asimov/Silv'brg Isaac & Robert The Positronic Man
SF

Doubleday BC ed, 1992
SUSP/HORR Popular Library, c. 1965
NVG@ 4.00
Betancourt, John (Ed.)
SF
Berkley
GOOD 2.50
Best of Weird Tales (from Terminus FANT/HORR
Publ. series]
8arnes-Noble 1st Ed., 1995
N-F DW/chps,sm.gouge 4.00
FINE DW tiny chips
3.50
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Jack
Philip
Wylie, Philip & Edwin Balmer
B. SCIENCE FICTION /
AUTHOR
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Woffile
The Spy Who Spoke Porpoise [VINTAGE]
HORROR
HORROR
SF
Fawcett Crest pb, 1972
Fawcett Crest pb, 1972
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FINE 8.00
PREHISTORY Fawcett Premier, 1956
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VG @ 5.00
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Pyramid, 1970
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BOOK TITLE
Paperback Libr, 5th pr,6/70 NVG % 5.00
CATEGORY
PUBLISHER/EDITION/YEAR

COND DW/BOOK DESCRIPT PRICE

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[Book Code: P.18}
The WORDSMITH Eclectic COLLECTOR - Issue No.4
SF
Canter,
Caras,
Mark
Roger [Ed.]
Ember From the Sun
Clarke,
Arthur C.
The Songs of Distant Earth
Treasury of Great Cat Stories
SF
Darnton,
Delaney,
John
Samuel R.
Neanderthal
Stars in My Pocket Like Grains of SF
Bantam, 1984
Delacorte Pr/BC ed., 1996 FINE VERY FINE
SF/MYSTAY Galahad Books, 1990
MINT DW Mint
Ballant/DelRey 1st Ed, 1986 MINT DW Mint
Anthro-SF Random House TrdPB/1st '96 N-F
15.0
Sand
Dickson,
Gordon R.
In Iron Years (short stories)
SF
Doubleday 1st Ed, 1980
Harrison,
Harry
Deathworld Trilogy, The (1 vol]
SF
Harrison,
Harry
Eden Trilogy [3 vol set]
SF
Harrison,
Harry
Return to Eden/Illos by Bill
SF
Bantam, BC ed, 1988
MINT DW Mint plastcov 8.
FINE DWsm.chips, scrat 13.
Doubleday BC ed, 1960-4-8 MINT DW very sm.chips 8.

Bantam, BC ed., 1984-6-8 MINT
* 10.0
PAGE 20
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The WORDSMITH Eclectic COLLECTOR - Issue No.4
D.
AUTHOR
[Book Code: P.18}
PAGE 21
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THINGS STRANGE AND UNKNOWN (NONFICTION) - HARD-COVER BOOKS
CATEGORY PUBLISHER/EDITION/YEAR
COND DW/BOOK DESCRIPT PRICE
Baigent,
Michael et al Holy Blood, Holy Grail (Religious RELIGION
speculation]
Delacorte 1st US ed, 1982 FINE DW VG+
15.00
Frazer,
Sir James
21.
Sanderson (V.3 trilg]
Harrison,
Harry
West of Eden/Illos by Bill
SF
Bantam, BC ed., 1984
MINT DW sm.corn.chips 8.
MINT DW Mint
I CHING Books
See:
Liu,
McFarland,
HCs Liu & Murphy PBs: 8lofeld and PREDICTION
Ponce
Da (Translatr) I CHING Coin Prediction
Kevin
The NEW Golden Bough/Abridg Ed by ANTHROPOL Criterion Books, 1959
Theodor H.Gaster
NF
DN edge chips
32.00
Sanderson [V.1 of tril]
Harrison,
Harry
Winter in Eden/Illos by Bill
SF
Bantam, BC ed, 1986
Sanderson (V.2 trilg]
Herbert,
Frank

Four [in 1 vol below]
SF
Avenel/Crown, 1984
MINT DW F sm.sp chips 8.
MINT DW Mint
Murphy,
Joseph
Incredible But True! [collect of FACT-vj
the extraordnry]
PREDICTION Harper & Row 1st Ed, 1975
Bell/Crown ed, 1978
MINT DW Fine
9.00
VG+ DW torn/complete 8.50
I CHING, Secrets of the
Robbins,
Rossell Hope
PREDICTION Parker, 1970
MINT DW Fine
9.00
The Encyclopedia of Witchcraft and OCCULT
Demonology
Crown BC ed, 1959
NF DW corn worn/chp 33.00
SF
Russell,
Herbert,
Frank
Soul Catcher
Jeffrey Burton The Devil/Percept.Evil
RELIG/HIST Cornell Univ 1st Ed, 1977 MINT DW Mint
19.00
Herbert,
Frank
The Dosadi Experiment
SF
Herbert,
Frank
The Santaroga Barrier
SF
SF
Herbert,
Frank
Whipping Star
FANTASY
Matheson,
Richard
Earthbound
McCaffrey,
Anne
The Ireta Adventure [2 "Dinosaur SF
Planet" novels]

SF/ESSAYS
Niven,
Larry
Pohl/Williamson Frederik/Jack
N-Space
The Saga of Cuckoo [Farthst
SF
Tor 1st Edition, 1994 NF
DW sm. tear, marks 5.
Doubleday BC ed, c.1978-84 FINE DW FINE
Tor, 1990
Doubleday BC ed, nd
E. THE MYSTERY GENRE
AUTHOR
Antiqty-Primtv. Christianty
PAPERBACK BOOKS
FIRST NAME
BOOK TITLE
CATEGORY
PUBLISHER/EDITION/YEAR
COND PRICE
9.
VF
DW sm.corn.chips 11.
NF DW
Avallone,
Brown, Rita Mae
Michael
7.
& Sneaky Pie
Burton,
Anne
Five-Minute Mysteries From the Files of Ed Noon
Murder at Monticello (Cat & Mrs. Murphy Mystery)
Worse Than a Crime [Canada]
MYSTERY
MYSTERY
Star/Wall Around Star]
Ryan,
Alan (Ed.)
Perpetual Light
Silverberg, Robt & M.Greenberg
Tales of Science Fiction (Intro
Silverberg)
SF
SF/SPECUL Warner BC ed., nd ['80s]
Galahad, nd
MINT DW Mint
MINT DW
Carr,
Caleb
11.

The Alienist
MYSTERY-vj Scholastic 1st ed pb, 1978 VF
Bantam, October 1995
Raven House 2nd pr, 1982
SUSPENSE Bantam, 1994
1.00
N-F
3.00
VF
4.75
NVG@ 2.00
Christie,
7.
Agatha
The Man in the Brown Suit
Clancy,
Tom
The Hunt for Red October
Stewart,
Vinge,
Fred Mustard
Joan D.
The Methuselah Enzyme
SF
Alien Blood ["Psion" and "Catspaw" SF
novels]
Arbor House, 1970
Doubleday 8C ed, c.1982-88
GD @ no DW
Deighton,
Len
1.
FINE DW&bk corn.bent
Deighton,
Len
8.1
An Expensive Place to Die [VINTAGE]
Yesterday's Spy [VINTAGE]
Deighton,
Derleth,
August
Len [VINTAGE]
Vinge,
Joan D.
Vinge,
Joan D.
Wilson,
Dreamfall [Sequel to Alien Blood] SF
Vinge's "Cat" Series (Both above) SF
Robert Charles The Harvest
Warner (BC ed), 1996
FINE DW Fine

7.
Derleth,
August
14.1
Derleth,
August
SF
Bantam Spectra HC/BC, 1993 MINT DW Mint
9.
Derleth,
August
C. THINGS STRANGE AND UNKNOWN (NONFICTION)
AUTHOR
FIRST NAME
800K TITLE
PAPERBACK BOOKS
CATEGORY
Diehl,
William
PUBLISHER/EDITION/YEAR
COND PRICI
Flynn,
Catch a Falling Spy [Twinkle, Twinkle Little Spy]
Adventures of Solar Pons #1 "ReShrlk Hlmes" [VNTG]
Chronicles of Solar Pons (#2) [VINTAGE]
Mr. Fairlie's Last Journey (#7) [VINTAGE]
The Solar Pons 3-book set [VINTAGE]
27 [Twenty-seven}
Erdrich/Dorris Louise/Michael The Crown of Columbus
J.M. [VINTAGE] The Screaming Cargo (Ace Dbl-Howard)
MYSTERY-vj Berkley pb ed, 1984
SPY/THRILL Berkley 1st pb, 1985
THRILLER Berkley Medallion, 1977
SPY/THRILL Warner Books, 1975
SPY/THRILL Pocket Books 3rd pr, 1977
MYSTERY
FINE 3.00
MINT 4.00
NVG 2.50
FINE 3.50
NF @ 3.00
MYSTERY
Pinnacle, 1974 prntg (Nov) VG+
Pinnacle, 1974 prntg (Dec) N-F
5.50
7.00
MYSTERY
Pinnacle, 1976 (May)
VG+
6.00
MYSTERY
Pinnacle, 1974 & 1976

15.50
THRILLER
Ballantine 1st pb, 1991
FINE 3.50
Forsyth,
Frederick
Anson,
Jay
Blofeld,
John (Ed/Trns) I CHING
Geddes,
Sheila
Astrology
Goodman,
Linda
Sun Signs [VINTAGE]
Hazen,
I CHING Books:
Lindsey,
Ponce,
The Amityville Horror [VINTAGE]
OCCULT
Bantam, 1978
VG+ 4.5
Forsyth,
Frederick
PREDICTION Dutton, 1968
FINE 7.5
Gill,
B.M.
The Day of the Jackal
The Odessa File [VINTAGE]
Death Drop [trade pb]
HIST/MYST Harper 1st pb pr, 1992
MYSTERY Ace Double F-130, c.1962
THRILLER Bantam, 1980 printing
VG+
2.50
GOOD 2.25
MINT 6.00
WWII/THRIL Bantam, 1974
VF
5.00
MYSTERY
ASTROLOGY Ideals 1st US trdpb, 1980 VG+
3.0
Gordon,
A.C.
ASTROLOGY Bantam, 1971
VG 2.0
Grady,
James

Mystery Stories [1 & 5-min u-solve 'em mysteries] MYSTERY
Six Days of the Condor [VINTAGE]
THRILLER
Scribners 1st US ed, 1979
HIS Publ., digest size, 1995 MINT
Dell 1st pr, 1975
VF
7.00
5.00
GD+@ 2.50
Barbara Shook You and Your Lucky Stars [VINTAGE]
See:
P8s: Blofeld & Ponce HCs: Liu & Murphy
Hal [VINTAGE] The Late Great Planet Earth
Charles [VINTG] I CHING, Nature of/Usage/Interpretation
covers are loose, spines faded.
Mish than white on some
"How'd They Get That Way?"
Today, every time I open a package of magazines ordered from a dealer 'cross country, I experience a joy not even equaled by the thrill of Christmas when I was a child. There, mine to hold, read, treasure, are the Amazing Stories Quarterly of the 1930s, the Super Science Stories of the 40s, the ever-so-wonderful Galaxy issues on which I cut my stf teeth as a teenager in 1950. Once more I own those fresh-off-the-newsstand and clean, bright, brown-envelope-mailed gems that once dwelt in my original collection.
These I just bought for $8, $12, $20 or more,
But wait!
aren't fresh.
They don't appear as clean and bright as
I remember those 25¢ and 35¢ periodicals. Some of these are nicked, chipped, marked upon with pen or pencil, even
ASTROLOGY Golden Press, 1970
FINE 5.(
Halliday,
Brett
PREDICTION
Harris,
Thomas
Dividend on Death [Canada a Mike Shayne Mystery] MYSTERY
The Silence of the Lambs
RELIG/OCCL Bantam 20th prntg, 1977
PREDICTION Award Books 1st pr, 1970
FINE 5.
Heywood,
Joseph
The Berkut
FINE 7.
Howard,
James A.

Death Audit [Canada]
Raven House 1st repr, 1982 VF
MYST/TERR St. Martin's Pr pb, 1989
WWII/THRIL Dell, 1988
MYSTERY
5.00
4-83
*VG
[AD] $2.00
Howard,
James A.
B
James,
less loved than my former issues.
and display evidence of wear and tear.
torn, and spattered here and there with ugly tape.
The pages look more br
These look less cared-for
They have wrinkles
Sor
Kaminsky,
P.D.
Stuart
The Bullet-Proof Martyr (Ace Dbl-Flynn) [VINTAGE] MYSTERY
The Skull Beneath the Skin
MYSTERY
Raven House 2nd pr, 1982
Ace Double F-130, c.1961
Warner 1st pr, 1983
VF 4.75
GOOD 2.25
MINT 4.00
The Death of a Dissident
MYSTERY
Ace Charter 1st pr, 1981
VG+
2.00
Leek,
Margaret
The Healthy Grave [Canada]
MYSTERY
Raven House pb 1st Ed, 1980 VF
4.75
Olcott,
Anthony
Both Russian Mysteries (below)
MYS-RUSSIA
4.50
Olcott,
Anthony
Olcott,
Anthony

look old!!
Hell, now that I think of it, many of these magazine
Sanders,
Lawrence
Stolen Blessings
Sanders,
Lawrence
youth. They too now look old.
Reminds me of my high school pals and movie idols of
Semyonov,
Julian
Shannon,
Dell
Case Pending [Canada]
That makes no sense.
happen?
How'd they get that way?
I haven't changed! When did it a
Shannon,
Dell
Rain With Violence [Canada]
- VINCE NOWE
Smith,
Martin Cruz
Gorky Park
May Day in Magadan [Sequel Murder @ Red October]
Murder at the Red October
Tales of the Wolf: The Cases of Wolf Lannihan
Tass is Authorized to Announce
THRILLER Avon 1st US pr, 1988
MYSTERY Raven House 2nd pr, 1982 VF 4.75
MYSTERY Raven House pb, 2d pr, 1980 VF 4.75
MYS-RUSSIA Ballantine 1st US ed, 1982 MINT 5.00
MYS-RUSSIA Bantam pb, 1984
VG
2.00
MYS-RUSSIA Bantam 8th pr, 1983
SUSPENSE
NF 3.00
Berkley, 1989
MINT 3.00
SUSP/MYST Avon 1st pr, 1986
NVG@ 2.00
FINE 4.50

[PAGE BREAK]

VG+ 5.5
CATEGORY PUBLISHER/EDITION/YEAR
COND DW/BOOK DESCRIPT PRI
The WORDSMITH Eclectic COLLECTOR - Issue No.4
The Investigation

Q8 VII
"Proteus
[Book Code: P.18}
CATEGORY PUBLISHER/EDITION/YEAR
PAGE 2
COND PRIC
LAW/MYSTRY Fawcett Crest/Ball, 1982 VG+ 3.1
LAW/MYSTRY Pocket Books 1st pr, 1978 VG 2.5
WWII/THRIL Bantam, 1980 printing NF 3.0
THRILLER
Murder Off Miami (u-solve: clues, solution INTACT] MYSTERY
Take the Money and Die [Canada]
Drilling for Death [Canada]
The Spy Who Spoke Porpoise (VINTAGE]
Bantam 6th pr, 1981
MINT 3.0
Hutchinson LgTrPaper repr. MINT 25.0
Raven House 2nd pr, 1982 VF @ 4.0
Raven House pb 1st Ed, 1980 VF 4.7
Pyramid, 1970
PUBLISHER/EDITION/YEAR COND DW/BOOK DESCRIPT PE
AUTHOR
FIRST NAME
800X TITLE
Uhnak,
Dorothy
False Witness
Uhnak,
Dorothy
Uris,
Leon
West,
Wheatley,
Morris
Dennis
Williams,
Wynn
MYSTERY
MYSTERY
Wolfe,
John
SF/SPY
Wylie,
Philip
AUTHOR
F. THE MYSTERY GENRE
FIRST NAME
HARD-COVER BOOKS
CATEGORY
BOOK TITLE
Caras,
Deighton,

Roger (Ed.)
Len
Treasury of Great Cat Stories
Violent Ward
Doyle, Sir
Arthur Conan
Ed [est age >100]
Nolan, William F et al
Murder in Los Angeles
MYSTERY Morrow 1st Ed, 1987
VF DW VF
-D.C. Fontana, Jon Breen, etc
G.
AUTHOR
HARD-COVER ANTIQUARIAN & RARE BOOKS - ALL SUBJECTS and FICTION
FIRST NAME
BOOK TITLE
SF/MYSTRY Galahad Books, 1990
MINT DW Mint
MYSTERY Harper Collins 1st Ed, 1993 MINT DW Mint
The Works of A.Conan Doyle 1-Vol MYSTERY Walter J. Black, NY, nd VG leath deterior'g 85
The WORDSMITH Eclectic COLLECTOR - Issue No.4
H.
AUTHOR
{Book Code: P.18}
VINTAGE PAPERBACKS [20 or > Yrs] - ALL SUBJECTS & FICTION (Other Than SF&F)
Bowra,
FIRST NAME
Buckley, Jr., William F.
800X TITLE
COND DESCRIPTION
PRICE
PAGE 23
CATEGORY PUBLISHER/EDITION/YEAR
Adams,
Akutagawa,
Henry
Democracy
Ryunosuke
Rashomon and Other Stories
[Trans.from Japanese]
AM/LIT NAL, 3rd pr, 1961
FINE Durabind "HC"
6.00
WORLD/LIT Liveright tr.pb, 1970
VF
4.00
Allen,
Hervey
Allen,
Hervey
Asimov (as Dr.A) Isaac

Bishop,
Jim
Action at Aquila [Civil War]
Anthony Adverse in America
(adapt. Anthony Adverse]
The Sensuous Dirty Old Man
The Day Christ Was Born
ADVENTURE Pocket Book #370, ca.1946 GD % Title page missg 3.00
HIST/FICTN Dell pb #285, c.1949
VG+
6.25
SEX/HUMOR Signet 1st pb, 1972
RELIG/HIST Pocket Books, 1961
NF
8.50
NVG FC sm. hole,creas 2.00
C.M.
The Greek Experience
HISTORY
Up From Liberalism
POLITICS
Mentor #MD275, 1st pr, 1959 VF
Hillman, 1961
7.50
N-F
7.50
[Intr.Goldwater/Fwd Dos Passos]
Calder,
Ritchie
Canby, Courtland & Nancy Gross
Science in Our Lives
SCI/HIST
The World of History/Int A.Nevins HISTORY
[HISTORIOGRAPHY)
Signet Key 1st pb, 1955 NYG@ FC bend, creases 2.00
Mentor #MD109, 1st pr, '54 VF
7.00
Ceram,
C.W.
Cottrell,
Leonard
De Wohl,
Louis
Anonymous
Sel.from Arabian Nights [illust / WORLD/LIT Book League of Amer, nd
R. Burton transl]
Botkin,
8.A. (Ed.)
A Treasury of American
AM.LIT Crown, c.1944
VG
Folklore/Fwd Carl Sandburg

Conrad,
Cooper,
Joseph
Victory
AM.LIT
Modern Library ed, nd
VG publ w/o DW
publ w/o DW
VG publ w/o DW
5.
De Wohl,
Louis
Edwards,
Jonathan
Engel,
Franklin,
James Fenimore The Last of the Mohicans [Academy HIST/FICTN Allyn & Bacon, 1945
FINE publ w/o DW
Leonard (Ed.)
Benjamin
work]
Gods, Graves and Scholars [classic ARCHEOLOGY Bantam, 1972
The Anvil of Civilization
The Living Wood [Relig Fict]
The Spear (Relig Fict]
Basic Writings
New Worlds of Modern Science
The Autobiography of Benjamin
Franklin
Freeman & Appel Eugene & David The Wisdom and Ideas of Plato
MINT
8.50
ARCH/HIST Mentor #MD197, 1957
HIST/FICT Popular Library, 1959
HIST/FICTN Popular Library #Sp10,1957
AM/LIT NAL, 3rd pr, 1966
PHYSIC.SCI Dell 1st Ed, 1956
HIST/BIOG Magnum Easy Eye ed, 1968 MINT
MINT
8.50
FR sp. torn, scratchs
1.50
GD @ cov creases
2.00
FINE Durabind "HC"
5.00
NF @ sm.edge chips
6.00
5.00
Classics ed]
Hamilton,
Doyle, Sir

Arthur Conan
The Works of A.Conan Doyle 1-Vol MYSTERY Walter J. Black, NY, nd
VG
leath deterior'g 85.
Hawton,
Edith
Hector
Ed [est age >100]
Hoover,
J. Edgar
Mythology [worldwide scope]
Philosophy for Pleasure
Masters of Deceit
PHILOSOPHY Fawcett Premier 2d pr, 1959 FINE
MYTH/HIST Mentor #MD86, 7th pr, 1957 NVG sm.pc corn missg
PHILOSOPHY Fawcett Premier, 1959 VG @ paper browning
POLITICS Cardinal Giant #GC-39,1961 MINT
5.00
4.00
4.00
6.00
Fox, Jr.,
Hanley
John
Jack
The Trail of the Lonsesome Pine
FICTION
Let's Make Mary (guide to
SEX/HUMOR
Scribners, 1st Ed, 1908 VG
Phoenix Press, 1937 illust VG+
Huxley,
Aldous
After Many a Summer Dies the Swan LITERATURE Avon #G-2001, nd (ca.1955) NVG% sm. hole BC, spine
3.50
publ w/o DW
publ w/o DW
30.
Huxley,
Aldous
Crome Yellow
FICTION
Bantam Classic, 1959
NF @ sm.chips spine
4.50
30.
scientific seduction]
Huxley,
Aldous
Time Must Have a Stop
FICTION

Berkley Medallion, 1960
MINT
5.00
Irving,
Washington
The Voyage & Other Essays From The AM.LIT
Sketch Book
Hough-Miff, 1891/perf.bndPB NF
James,
Henry
The American
AM/LIT
NAL, 6th pr, 1963
FINE Durabind "HC"
6.00
cov:lt.scribbles 10.
Josephson, Eric & Mary (Eds.)
Keene,
Carolyn
Keene
Carolyn
Both DANA GIRLS Mysteries (below) MYSTERY
The Circle of Footprints [Dana
Man Alone / Alienation in Modern PSYCHOLOGY Dell 1st Ed/3d pr, 1964
Society
FINE
5.00
VG
MYSTERY
Keene
GONE
Girls Mystery]
Carolyn
The Secret at Lone Tree Cottage
[Dana Girls Myst]
MYSTERY
Grosset & Dunlap, 1937 VG
may be 50s
Grosset & Dunlap, 1934
edition
VG
publ w/o DHA
publ w/o DH
222
22:
Kafka,
Franz
12.
The Penal Colony/Stories and Short LITERATURE Schocken trdpb, 1977 prntg VG+@ sm. edge chips
Pieces
7.00
Kafka,

Franz
12.
The Trial [has >10,000 words not
in 1st US ed]
WORLD/LIT Vintage 8ks Defin Ed, 1969 FIN@ sm.blemish FC
10.00
Lester
Paul
The Great Galveston Disaster
Illustrated [1900]
US/HIST-vj Hoey Publ. Co, Chicago, 1900 VG+ publ w/o DW
Komroff,
Laird,
London
Jack
"Jerry Book Set (2)
London,
Jack
Jerry of the Islands
DOG STORY MacMillan, 1917
Levenson,
VG+
publ w/o DH
20
Londbar
Jack
Michael, Brother of Jerry
DOG STORY MacMillan, 1917
Lofts,
Sam
Norah
Everything But Money
VG+
publ w/o DW
Muller,
Herbert J.
Manuel
His Great Journey [life of Christ] RELIG/HIST
Melvin R. (MC) Republican Papers
How Far to Bethlehem? [Relig fict] HIST/FICTN
The Uses of the Past
POLITICS
HUMOR
HISTORY
Lion Library, 1956
Doubleday Anchor Orig, 1968 MINT
Pocket Books 1st pr, 1967 GD
Fawcett Crest, nd (1965)
Mentor #MD112, 2d pr, 1956 VF
GD @ sm creases
2.00
6.00

rolled, creased
2.00
FR
sp torn, cov bend
1.00
7.00
Masson,
Rosaline
A Short History of Scotland the
Nation
DOG STORY MacMillan, 1917
HISTORY
VG+
publ w/o DWS
[Historiography]
Thomas Nelson, 1944 prntg. GD+
publ w/o DW
Napier,
Geoffrey
The Wrong Box
HUMOR-vj
Dell 1st pr, 1966
VG+@ sm.tear spine
5.00
Remarque,
Seekey,
Erich Maria
Mabel
All Quiet on the Western Front
The Listening House
Viereck/Eldridg G.Sylvstr/Paul My First 2000 Years/Autobiog of
Orwell,
George
Down and Out in Paris and London
AUTOBIOG
Berkley Medallion, 1959
GD % cov-sp separat'g 2.00
MYSTERY
WW I/FICTN Putnam, London, 15th pr 1929 FINE publ w/o DM
23.
Packard,
Vance
The Hidden Persuaders
PSYCHOLOGY Cardinal #C-288 7th pr 1959 FINE
5.00
FICTION
"Wandering Jew"
Heems
John Edward
A Weekend in September (The
Galveston Storm 1900]
Doubleday/Crime Club, 1938 FAIR cov/bind loose

Macaulay, 12th pr, 1930
US/HIST vj Henry Holt 1st Ed., 1957
8.
[controversial classic]
FINE publ w/o DW
22.
Rolvaag,
O.E.
Giants in the Earth / A Saga of
the Prairie
HIST/FICTN Harper Perren. Classic, 1965 VG
Permabound "HC 7.00
FINE ON well WOTH
Roosevelt,
Rouse,
SPECIAL
OFFER FOR TRUE
James (Ed, Int) The Liberal Papers (trade paper)
W.H.D.
Heroes and Men of Ancient
Gods,
Greece
POLITICS Doubleday Anchor Orig, 1962 FINE slight sp fading 6.00
MYTH/HIST Signet Key 1st pr, 1957 FINE
7.00
Knight's ILLUSTRATED HISTORY OF ENGLAND, London, 8 vals, publ. 1837 to 1849; leath-
erbound; gilt-top pp; FINE.
paid $1,200 in 1988. FIRM BRICE: $550, INCL.SHIP/INS.
TORY
UFFS
Shadegg,
Schlafly & Ward Phyllis/Cheste The Gravediggers
Stephen
POLITICS Pere Marquette Pr, 1964 MINT
Barry Goldwater: Freedom is His POLIT/BIOG MacFadden, 1963
Flight Plan
5.00
NF @ sm.spine crease 4.00
O

[PAGE BREAK]

AUTHOR
Silverberg,
FIRST NAME
BOOK TITLE
Lost Cities & Vanished
Civilizations
NF
Slaughter,
Steinbeck,
Frank G.

The Crown and the Cross
John
America and the Americans
[photographs)
Steinbeck,
John
Travels With Charley / In Search TRAY/OBSER Bantam 30th pr, 1968
MINT
of America
Storer,
John H.
The Web of Life (1 of first
ECOLOGY
Signet Key, 1st pr, 1956 VG+

Robert
CATEGORY
[Book Code: P.18}
PUBLISHER/EDITION/YEAR
ARCHEOLOGY Bantam Pathfinder, 1963
HIST/FICT Permabook 1st pr, 1960
TRAY/OBSER Bantam 6th pr, 1968
PAGE 24
COND DESCRIPTION
MINT
PRICE
10.00
FIN@ sm.scratches FC 5.00
10.00
7.00
The WORDSMITH Eclectic COLLECTOR - Issue No.4
J.
GENERAL INTEREST HARD-COVER BOOKS - FICTION & NONFICTION
AUTHOR
FIRST NAME
BOOK TITLE
{Book Code: P.18}
PAGE 25
CATEGORY PUBLISHER/EDITION/YEAR
COND DW/BOOK DESCRIPT PRICE
James
Agee,
Armory,
Cleveland
Cleveland
6.00
Armory,
Armory,
Cleveland
popular books on subj]
Stormer,
Thoreau,

Van Loon,
John A.
Henry David
Hendrik
None Dare Call It Treason
POLITICS
Walden and Civil Disobedience
AM/LIT
The Story of Mankind
HISTORY
Cardinal Giant #5, 1952-3 VG
Liberty Bell, 14th Pr, 1964 MINT
NAL, 28th pr, 1960
A Death in the Family
Compleat Cat [3 in 1 below)
The Best Cat Ever (c.1993]
The Cat Who Came for Christmas
[c.1987]
FICTION
McDowell, c.1957
WIMSY/HUMR Black Dog & Leventhal, nd MINT DW Mint
WIMSY/HUMR
NVG DW chipped, worn 5.00
10.00
WIMSY/HUMR
Cleveland
NF
Durabind "HC"
5.00
Armory,
The Cat and the Curmudgeon
NIMSY/HUMR
5.00
[c.1990]
Verrill,
A. Hyatt
The Strange Story of Our Earth
PREHISTORY Fawcett Premier, 1956
VG @ spine creases
5.0
Barry,
Dave
Dave Barry Slept Here/A Sort of
HUMOR
Random House 1st Ed, 1989 MINT DW Mint
7.50
5.0
History of the U.S
Vidal,
Gore
1876
HIST/FICTN Ballantine 2nd pr, 1977

HIST/FICTN Bantam, 1974
MINT
5.5%
Barry,
Dave
Dave Barry's Guide to Life
HUMOR
Wings Books ed, 1991
MINT DW Mint
9.50
VG+
Vidal,
Gore
Burr
Wallace,
Lew
Wallace,
Lew
Ben-Hur
The Fair God [novel of conquest of HIST/FICTN Popular Library, 1962 FINE
HIST/FICTN Cardnl Gnt#GC-75, 1 pr '59 FINE
4.5%
7.5%
Barry,
Dave
Dave Barry's Only Travel Guide
You'll Ever Need
HUMOR
Fawcett Col. 1st ed, 1991
MINT DW Mint
9.50
7.00
Benchley,
Robert
The Best of Robert Benchley /
Illos by Peter Arno
HUMOR
Avenel/Crown, 1983
MINT DW Fine
8.00
Mexico]
White,
T.H.
The Bestiary
Wylie,
Philip
Generation of Vipers
NAT.SCIENC Putnam/Capricorn, 1960
CRITICISM Cardnl Gnt #GC-62 2d pr, '59 NF
MINT
7.0%
Bermant/Weitzma Chaim/Michael Ebla [impact of archeology on

ARCHEOLOGY Times 8ks, 1st US ed, c.1979 FINE DW VG
12.00
7.50
Biblical history]
Bishop,
Jim
The Day Christ Died
[controversial at the time]
Wylie,
Philip
Opus 21
FICTION
Cardinal Giant #85, 1960 VG
5.00
Bottigheimer, Karl S.
Ireland and the Irish/A Short
HISTORY
RELIG/HIST Harper, c.1957 (libr.copy) FINE DW: F, plastic cov 4.00
Columbia Univ 1st Ed, 1982 MINT DW Mint
10.00
History
I.
GENERAL INTEREST PAPERBACKS - FICTION & NONFICTION
CATEGORY
PUBLISHER/EDITION/YEAR
Forster,
E.M.
Books [3 in 1 vol below]
FICTION
COND PRICE
Gramercy ed, 1993
MINT DW Mint
12.50
AUTHOR
FIRST NAME
BOOK TITLE
Forster,
E.M.
Howard's End [1910]
FICTION
Forster,
E.M.
Room With a View, A [1908]
FICTION
Dave
Ballou,
Robert O. (Ed.) The Portable World Bible (8 major religions]
Balsiger/Sellie David/Charles The Lincoln Conspiracy (VINTAGE)
Barry,
Homes and Other Blackholes
Beck, Warren D. & Ynez D. Haase Historical Atlas of California
Breathed,

Breathed,
Brown,
Brown,
Clavell,
Clavell,
James
James
Berke
Penguin Dreams & Stranger Things (Bloom County)
Berke
Tales Too Ticklish to Tell [Bloom County]
Daniel Patrick The Protectorate & the Northumberland Conspiracy
Daniel Patrick The Tragedy of Libby & Andersonville Prison Camps
King Rat
RELIGIONvj Penguin trdpb, 1976 [VINTGE) VG+@ 4.00
HIST/SPECU Schick-Sunn 1st Ed pb, 1977 FINE 4.00
HUMOR Fawcett 1st Ed, trdpb, 1988 NF 6.00
CALIF/HIST Univ.Okl. Pr-lg.tr.pb 9X12 VG+ 13.00
HUMOR-vj Lt18rown 1g.trdpb, 1985 VF 8.00
HUMOR-vj Lt1Brown 1g.tradpb, 1988 MINT 10.00
8R/HIST-vj Golden West 2d pr, 1989 VF 2.50
US/HIST-vj Golden West 4th pr, 1988
WWII/FICTN Dell 4th pr, 1976
Forster,
E.M.
Where Angels Fear to Tread [1905]
FICTION
Frank,
Harry Thomas Discovering the Biblical World
RELIG/HIST Hammond ovsize 1st Ed, 1975 MINT DW sm.chip, scrat 27.00
[Arch, Hist, Geog]
Frend,
W.H.C.
The Rise of Christianity
Grant,
Michael
History of Rome
RELIG/HIST Fortress Press, 1984
HISTORY Scribners, 1978
MINT DW Mint
22.00
Graves,
Robert
King Jesus
Graves
Robert (trans) I, Claudius (green embossed
MINT DW Mint
RELIG/FICT Farrar... 5th pr, 1984 MINT DM Mint
HIST/BIOG Intl Collectors Lib,c.1961
11.00
12.50
MINT publ w/o DW

9.50
binding]
VF
2.50
Tai-Pan
Crane,
Stephen
George,
Margaret
The Red Badge of Courage [Civil War Classic]
The Autobiography of Henry VIII
ADVENTURE Dell 7th pr, 1977
AM/LIT
MINT 4.00
MINT 4.00
Guerber,
Howard,
H.A.
Donald R.
Middle Ages/Myths & Legends HIST/LIT
Chaucer: His Life, His Works, His HIST/LIT
World
Bracken 8ks, London, 1986
Dutton 1st Ed., 1987
MINT DW Mint
14.00
MINT DW Mint
20.00
Greene,
Graham
Monsignor Quixote
Gregory,
Dick
Nigger-An Autobiog [VINTAGE]
Haley,
Alex
Roots (VINTAGE)
Bantam Classic 7th pr, 1985 NVGE 2.50
HIST/FICTN Ballantine lg.trdpb, 1987 MINT 10.00
FICTION
NF
Pkt 8ks/WSP ed, 1983
3.00
BIOG-vj Pocket Cardinal 10th, 1968 FR % 1.50
HIST/FICIN Dell 1st pr, 1977
MINI 4.00
Kipling, Rudyard Sel-J.Beecroft A Selection of Stories & Poems
[Two-volume set]
WORLD/LIT Doubleday BC ed, 1956
VG
DW sm.tears, worn 13.00
Magnusson,

Mailer,
Marsh,
Magnus
Archaeology of the Bible
Norman
Ancient Evenings
ARCHEOLOGY Simon-Schuster BC ed, 1977 MINT DM sm tear spine 9.50
HIST/FICTN Little Brown BC ed, c.1983 MINT DW sm.wrinkle
8.00
Jean
Heilbroner,
Hemingway,
Robert L.
Ernest
The Worldly Philosophers Grt. Econ. Thinkrs [VINTGE] ECONOMICS
The Old Man and the Sea [VINTAGE]
Lawrence,
D.H.
Four Short Novels [below]
Lawrence,
D.H.
Lawrence,
D.H.
Four Short Novels: Love Among the Haystacks
Four Short Novels: The Captain's Doll
Sim&Schust Touchstone, 1976 MINT 5.00
LITER-vj Chas. Scribners pb, nd-1977? NVG 1.00
FINE 5.00
BR/LIT-vj Penguin Books, 1982
The House of Eliott [Based on BBC HIST/FICTN St. Martin's Pr 1st US, 1993 MINT DW Mint
TV series]
8.00
8R.LIT-vj
McCullough,
McCullough, Colleen
Colleen
BR.LIT-vj
Book Set: "The Masters of Rome"
[1st four novels]
Caesar 's Women [#4 in Masters of HIST/FICTN Morrow 1st Ed tr/papr 1996 FINE
Rome series]
HIST/FICTN Morrow 1st Ed, 1990-91,93,96 FINE DW FINE
75.00
15.00
Lawrence,
D.H.
Four Short Novels: The Fox
BR.LIT-vj
McCullough, Colleen
Lawrence,
D.H.
Four Short Novels: The Ladybird

Fortune's Favorites [#3 in Masters HIST/FICTN Morrow 1st Ed, 1993
of Rome series]
FINE DW FINE
22.00
McManus,
Mitchell,
Patrick F.
Kirk
The Good Samaritan Strikes Again
BR.LIT-vj
Morgan/Symmes, Hal & Dan
Robinson,
Schonfield,
Smith,
Solzhenitsyn,
Henry Nash
Alexander
Virgin Land [the American west] [VINTAGE]
One Day in the Life of Ivan Denisovich
Steinbeck,
John
The Pearl
Sussman,
Gerald
Not Quite TV GUIDE
Sussman,
Gerald
Over-Extension University Bulletin
Tine,
Robert
Tucker-The Man & His Dream (from screenplay]
A.D. Anno Domini [from Vincenzo Labella film]
Amazing 3-D [Printed in 3-D, incl orig glasses)
James M. (Ed.) The Nag Hammadi Library [new Gnostic script.trans] RELIG/ARCH Harper & Row
trdpb, 1981 MINT 9.00
Hugh [VINTAGE] The Passover Plot [Religious speculation]
RELIGION Bantam, 1967
US/HISTORY Harvard trdpb, 3d pr, 1973 NF @ 4.00
POL.FICTvj Bantam Windstone ed, 1981 NF @ 3.00
Bantam, 1978
Prince trdpb/Crown, 1983 NF
M.Evans trdpb, 1st, 1982
HIST/FICvj Pocket Books orig, 1988
HUMOR/FISH H.Holt 1st Ed trdpb, 1992 VF 4.00
McCullough,
Colleen
HIST/FICTN Berkley, 1985
ENTRTAINvj Little Brown 2d pr, 1983 FINE 25.00
MINT 3.00
The First Man in Rome [#1 in
Masters of Rome ser.]
HIST/FICTN Morrow 1st Ed., 1990

FINE DW FINE
23.00
McCullough,
Colleen
The Grass Crown [#2 in Masters of HIST/FICTN Morrow 1st Ed., 1991
Rome series]
FINE DW FINE
22.00
GD @ 2.00
McGroarty,
John S.
McGroarty,
John S.
AM/LIT
VF
3.00
California: Its History & Romance HISTORY
[pebbled bindg]
California: Its History & Romance HISTORY
[Frntpc missing]
Grafton 1st Ed., inscrb1913 600D publ w/o DW
12.00
Grafton, 12th ed, 1928 NF publ w/o DW
12.00
HUMOR
5.50
Meeks,
Wayne A.
First Urban Christians, The Soc RELIG/HIST Yale University Pr, 1983 MINT DW Mint
World of St. Paul
9.00
HUMOR
5.00
VF
NF @ 2.50

[PAGE BREAK]

{Book Code: P.18}
PAGE 26
The WORDSMITH Eclectic COLLECTOR - Issue No.4
CATEGORY
AUTHOR
Parrinder,
FIRST NAME
800K TITLE
Geoffrey
World Religions From Ancient
History to Present
Penman,
Penman,
Sharon Kay

Both Novels (below)
Sharon Kay
Be Dragons")
Penman,
Robinson,
Sharon Kay
Here Be Dragons
Gnostic script.trans]
Silberman,
Neil Asher
& Arch Holy Land
PUBLISHER/EDITION/YEAR
RELIG/HIST Facts-on-File USA ed, 1983 MINT DW edge chips
Falls the Shadow (Sequel to "Here HIST/FICTN Henry Holt 1st Ed., 1988 MINT DW Mint
James M. (Ed.) The Nag Hammadi Library [new
Digging for God & Country/ Explor ARCHEOLOGY Knopf 1st Ed., 1982
COND DW/BOOK DESCRIPT PRICE
20.00
HIST/FICTN
20.00
12.00
HIST/FICTN Holt/Rinehart BC ed, c1985 FINE DW NF
RELIG/ARCH Harper & Row, cloth, 1988 MINT DW Mint
10.00
27.00
MINT DW Mint
15.00
Weens,
John Edward
A Weekend in September (The
US/HIST vj Henry Holt 1st Ed, 1957
FINE DW well worn
12.00
Galveston Storm-1900]
West,
Morris
Books - 3 in 1 vol / Vatican
RELIG/FICT Wings ed, 1993
FINE DW Fine
15.00
Trilogy (list below)
RELIG/FICT
West,
Morris
Lazarus (c.1990]
West,
Morris
The Clowns of God (c.1981]
RELIG/FICT
West,
Morris
The Shoes of the Fisherman

[c.1963]
RELIG/FICT
Wilken,
Robert L.
The Christians as the Romans Saw
Them
RELIG/HIST Yale University Pr, 1984 MINT DW Mint
6.00
EXCERPTS
FROM
MY
"WISH BOOK
00.
(WANT
LIST)
Out
f
Date
As a collector AND READER (not a dealer) I'm not particularly seeking top-grade, resale-able copies. My requirements: magazines MUST have at least a Front Cover (Canon/Xerox repro OK) and books MUST have both covers (and preferably a DW for HCs). All items MUST be complete, NOT BRITTLE, and not greatly tattered. I've found many dealers' VG+, VG, NVG and (sometimes) GOOD condition ratings acceptable. When possible, I prefer to TRADE and will negotiate generously. Items marked with asterisks (*) are MY FIRST PRIORITY.
A Merritt's Fantasy Magazine 1949: 12 (1)
✓ Analog 1960: 11
Astounding Stories Yearbook #2
Astounding Stories/SP Selected Issues: 1930-36,
Aug 1939, 1941 through 1960 (selected)
Amazing Stories Selected 1926-29, 11/31, 1933-
1939 (selected)
[AD] Amaz.Stor.Quartly Selected 1928-1931
Amaz. Detective/8cientific Detect. All 10 (1930)
Captain Zero 1950: 1, 3
* Fantastic 1953: Jan Feb and 1954: 12
Fantasy Book (V.H. Crawford's 1947-51 opus -)
#1, #3, #4, #5, #6, and #8
* Galaxy Novels (Digest -) #6, #17, 823, #24,
#25, #26, 29, and #31; (Beacon pb - #32,
#33, #34, #36, and #37
* Golden Fleece 1939: 1
Famous Fantastic Mysteries Selected 1940-47,
6/48, 2 & 6/49, 1951-53 (selected)
* Fantastic Novels Selected 1940-49, 11/50, 1/51
Groff Conklin, Ed.:
SEEKING
ADD:
[AD] Mag of F & SF Selected 1950-1960, Oct.anniv.iss.
[AD] * Galaxy SF Mag 1952, Selected 1954-1961, Oct.
anniv.issues (selected)
Space Stories 1953: 46
[AD] * Planet Stories Selected 1939-1955

Strangest Stories Ever Told 1970: Summer
Tales of the frightened 1957: 8 (#2)
Unknown Worlds of Science Fiction ("COMIC")
1975: 3, 9, 11. [& "Special #1 Issue" if dif-
ferent than "regular" No.1 issue ?????]
Vanguard Science Fiction 1958: 677)
Wonder Stories Group:
[AD] Air Wonder Selected 1929-1930
Science Wonder Selected 1929-30
Sci.Wonder Qtly. Wntr, Spr 1930
Wonder Stories Selected 1930-31,
[AD] Fond. Stor.Qtly. All 11 1930-1933 issues
[AD] Thrill.Wonder. Stor. Selected 1936-1955
Wonder Stories (Popular Libreviv) 1963: 4 (#2)
1933-36
✓ Worlds of Fantacy (Galaxy/U.S.A-3-1968: 9 (11)
SF & F
HISTORY
If someone has a copy of the following for trade or sale, please contact me.
Ashley, Michael History of the Science Fiction Magazines, Vol.4 In trade PB size.
PAPERBACK BOOKS
ADDENDA FOR THIS 2nd PRINTING (SUMMER 1997)
5 Unearthly Visions Fawcett Gold Medal 1st, 1967, GOOD (Vintage) $2.00;
Classics of Science Fiction - "Undiscovered Gems" Fawcett Gold Medal Orig, 1963, corn.crease, NVG (Vin
tage) $3.50; Robert Hoskins, Ed.: Strange Tomorrows - short novels Lancer Orig, 1972 (Vintage)
FAIR-GOOD
[AD] $1.50; Leo Margulies, Ed.: 3 From Out There - 3 "novels" Fawcett Crest Orig, 1959 (Vintage),
GOOD-FAIR
O'HARA, JOHN Collected Stories... Gen (Fict) Random Hs. TrdPB, c.1984, corn.bent, VG $2.50.
[AD] $1.50. /I
12 Great
Also Want: "The Free Enterprise Patriot" by John Rickey, Research/Development, Chicago 1964.
The WORDSMITH Eclectic COLLECTOR
Anthro
- S C
i en
ce
by Vince Nowell
IN THE SPIRIT OF Sir Arthur Conan Doyle's The Lost
versions.
World, readers are now seeing protohuman or hominid
To put it in the crude vernacular, "cave-
men-still-live-among-us novels abound.
The 1996-97 tales that have come to my attention are
Mark Canter's Ember From the Sun (Delacorte), Petru
Popescu's Almost Adam (Wm. Morrow/Avon), and John Darn-
ton's Neanderthal (Random House).
These fall into a broader category of stories that
science fiction writers have treated for years, viz.,
anthropology, or more precisely, paleoanthropology.
This kind of tale has always grabbed my attention.

The first speculative-fiction anthropological story I ever read was H.G. Wells' "A Story of the Stone Age." In a gross compression of time, his Cro-Magnon-like characters discover, by reasoning, fundamental tools and processes that underlie human culture, hence, civilization.

Jack London did something similar in a story entitled "Before Adam" that is not in my collection. But his "first man" (and woman) is dealt with more melodramatically. As in Wells' tale, the characters also lay the foundations for the subsequent presence of homo sapiens sapiens.

Ken Follett, introduced a genealogical succession of characters beginning in Great Britain's paleolithic onset in Pillars of the Earth (historical fiction, not science fiction). The descendants of these early humans continue to inhabit the area around Stonehenge well into the time of Elizabeth I in the book.

THE STORIES THAT have truly caught my attention, and constitute some of the better speculation about early man and pre-man, are by such writers as Michael Bishop, Harry Turtledove, Jean Auel, and William Golding. (Pardon the use of the gender-slanted "man/men," but doing so helps the writing flow better and conforms to accepted paleoanthropological practice, politically correct or not. (Refer to the February 1997 issue of National Geographic.)

MICHAEL BISHOP's NO ENEMY BUT TIME is one of the best speculations on the nature, i.e., the mentality, of proto-hominids. He uses time travel to place his lead character, John Monegal, in central Africa millions of years ago, in a setting right out of the Leakey journals. The meeting of modern, h.sapiens sapiens culture represented by Monegal and that of the australopithecines among whom Monegal finds himself, is written believably and sensitively. No "caveman" grunt-and-pull-females-around-by-the-hair stuff here! It's a more serious, more entertaining, work than his novel about a leftover specimen of homo habilis who shows up in the protagonist's backyard tree one morning, rapidly learns English, and becomes a major artist.

WHICH BRINGS UP the theme of the plunging of early man/prehuman characters into a modern setting. HARRY TURTLEDOVE does just that in A DIFFERENT FLESH. Alternate history is the mechanism for this, which he has developed to new heights in speculative fiction. Yet I found Mr. Turtledove's "sims" (for "simians"?) difficult to accept at times; he overdoes the "noble savage" theme. His book moves inexorably toward the idea of bad White intruders vs the besieged native

inhabitants of the New World.
Indians and colonists
all over again. This time, however, the Native-Americans get a somewhat better break.
An interesting story, the revival of homo sapiens neanderthalensis, is MARK CANTER'S EMBER FROM THE SUN. Canter, professional journalist-turned-fiction-writer, displays a remarkable knowledge of human biology and medicine.
very solid.
Technically, much of his book is
His character development and speculation about the physiology of Neanderthals are weaker aspects of the novel, however.
A far better treatment, with evidence of painstaking research, is JOHN DARNTON's NEANDERTHAL. This "spy thriller" combined with sf about the discovery of H. Neanderthal surviving into modern times is well written, even if a few incidents stretch credibility. He delves deeply into the hominid psyche, offering acceptable ideas re psychology and parapsychology.
PETRU POPESCU's ALMOST ADAM offers a similar "lost world" treatment, australopithecus in modern Africa. Popescue combines mystery, high adventure, political commentary, anthropological insight, and academic competitiveness all in one book. The hominid nearly becomes background. An interesting mental romp.
The best treatment of the "near-human-among-us" concept I have ever read is Vercors' (Jean Bruller) You Shall Know Them. (My copy is from Little, Brown & Co., 1953.) Vercors explores the question "what is man?" via the idea of the discovery of "ape-men" in the 20th century. This remarkable work by the former
Nazi
French Resistance leader, possibly inspired by recent ideology, combines philosophy, theology,
law,
and anthropology in a masterful blend of story-telling. If it has not been reprinted, it should be.
MY PREFERENCE STILL RUNS to those stories that try to describe for us human moderns what life (and people) were like a half-million and more years ago, à la Wells and London. For research, I'll give an award to Jean Auel's The Clan of the Cave Bear, but not its exhausting sequels. My close-second prize goes to J.H. Rosny's Quest for Fire, a book that became an even better motion picture. My only quarrel in both is the assumption of inherent brutishness in Neanderthals. Ms. Auel offsets that somewhat by incorporating a degree of esp powers among her otherwise virtually mute people, an idea used in Darnton's, and (es-

pecially) Canter's books, and hinted at in Popescue.
My Grand Prize Award, however, goes to William Golding for The Inheritors. His verbal portrait of Neanderthals is probably the most credible I have ever encountered. Golding's people are both savage and lovable, rudimentary and innovative, rough survivalists and fearful spiritualists, lustful and fun-loving.
In short, they are just like us! (My personal view is that Neanderthal DNA survives to this day in the human gene pool.)
Via Golding we can understand them, sympathize with them, be concerned for their future, and share their joys and griefs. He carefully and thoughtfully adapted the "human element" into an allen culture, presenting it to us as revelation. That's great writing.
AUTHORS and TITLES in bold/bold italics are available in the Science Fiction PB and HC lists in this issue.
PAGE 27

[PAGE BREAK]

MAGAZINE: POPULAR SCIENCE
DATE: MAY 1949
VOLUME 154, NUMBER 5
PAGES: 106-112
ARTICLE: IS U.S. BUILDING A NEW MOON?
AUTHOR: WILLY LEY

[PAGE BREAK]

MAVINARI
MOUNTAIN
PATH OF
ORBITAL ROCKET
PATH OF
SLOW ROCKET
EARTH'S
ATMOSPHERE
Imaginary mountain, towering hig
above earth's atmosphere, represents
point in space where orbital rocke!
would be launched. Any slow-moving
rocket fired from top of this mountain
would eventually strike the earth
since it would fall faster than the
earth's surface would curve away beneath it. When velocity is 5 miles
Per
second, however, distance rocket falls
exactly equals distance earth's sur
face curves away-eight inches every

mile. Thus, though rocket keeps foll
ing toward the earth, the earth keeps
bending away from it, and it can
never land. Broken line shows how
path of slow rocket, if continued
would form ellipse; path of orbital
rocket would form ellipse in same woy
er" to spin around the earth like the moon.
A 10,000-m.p.h. space ship might fly
around the world, but it would not be, and
could never become, a genuine satellite.
Even if it were driven by atomic energy,
such a go-cart would eventually have to be
refueled. The moon doesn't need any fuel.
Nor could a 10,000-m.p.h. craft ever slip out
of the grip of the earth's gravity. To do that,
you'd have to go over 25,000 m.p.h.
Before some Tom, Dick, or Harry takes off
like a character in fiction, however, a second
moon is likely to become one of the many
ramparts watched by America's armed forces.
It won't have anybody in it.
It will never need more fuel.
It will be much smaller, closer, and faster
than the moon that makes men croon, but
it will be bound just as tightly to Mother
Earth's apron strings.
How soon a moon like this will hang over-
head depends pretty largely on how much
money is spent how fast. I believe that
without making a noticeable dent in the na-
tional budget an orbiter of this type could
be planted in the sky within 10 or 12 years.
Once a projectile was out in space, a

shove of 18.000 m.p.h. would be enough to
keep it going around and around like the
moon. That velocity could be attained with
"step rockets." which are simply two-in-one
or three-in-one rockets.
Such rockets are the only known kind that
could make full use of a testing range 3,000
miles long. And that, you cannot be criti
cized for noting, is the length of the range
that U. S. defense chiefs now want.

Two-Step Rocket Tried

Much research along this line has already
been done (see "Going Up for Keeps," PS
March '47, p. 66). Late last February, the
Army set off a two-step rocket at White
Sands, N. Mex., that reached an altitude of
250 miles and a velocity of 5,000 miles an

hour, both record achievements. Much more research, however, remains to be done. The sketches on pages 106 and 107 show how a three-step rocket might plant a small manless moon in the sky. The sketches these pages show why a velocity of 18,000 m.p.h., which is 5 miles per second, would keep it up until doomsday if nothing knocked it off its course.

[PAGE BREAK]

MAVINARI
MOUNTAIN
■PATH OF
ORBITAL ROCKET
PATH OF
SLOW ROCKET
EARTH'S
ATMOSPHERE
Imaginary mountain, towering hig above earth's atmosphere, represents point in space where orbital rocket would be launched. Any slow-moving rocket fired from top of this mountain would eventually strike the earth since it would fall faster than the earth's surface would curve away beneath it. When velocity is 5 miles per second, however, distance rocket falls exactly equals distance earth's sur face curves away-eight inches every mile. Thus, though rocket keeps falling toward the earth, the earth keep bending away from it, and it can never land. Broken line shows how path of slow rocket, if continued. would form ellipse; path of orbital rocket would form ellipse in some way
SECOND ROCKET JS
FICED FROM FIRST
NEAR PEAK OF ITS
TRAJECTORY
EARTH'S CENTER
PATH OF
SECOND ROCKET
Using two rockets, one fired from the other, would accomplish sam thing as launching single rocket from imaginary mountain on previou page. First rocket, fired near straight up, would carry to well abo

earth's atmosphere. Then secon
rocket, fired from first one near pea
of its trajectory, would be placed i
path almost at right angle to earth
radius. This rocket, traveling at
miles per second, would then ente
permanent orbit around earth whil
first rocket dropped back. Actual a
'tempt would probably require 3-ste
rocket, but principle would be th
same. Note that two rockets' ellip
cal paths would both have earth
center as one of their two focal point
er" to spin around the earth like the moon.
A 10,000-m.ph. space ship might fly around the world, but it would not be, and could never become, a genuine satellite. Even if it were driven by atomic energy, such a go-cart would eventually have to be refueled. The moon doesn't need any fuel. Nor could a 10,000-m.p.h. craft ever slip out of the grip of the earth's gravity. To do that, you'd have to go over 25.000 m.p.h.

Before some Tom, Dick, or Harry takes off like a character in fiction, however, a second moon is likely to become one of the many ramparts watched by America's armed forces.

It won't have anybody in it.

It will never need more fuel.

It will be much smaller, closer, and faster than the moon that makes men croon, but it will be bound just as tightly to Mother Earth's apron strings.

How soon a moon like this will hang overhead depends pretty largely on how much money is spent how fast. I believe that without making a noticeable dent in the national budget an orbiter of this type could be planted in the sky within 10 or 12 years,

Once a projectile was out in space, a

shove of 18.000 m.p.h. would be enough to keep it going around and around like the moon. That velocity could be attained with "step rockets." which are simply two-in-one or three-in-one rockets.

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The sketches on pages 106 and 107 show how a three-step rocket might plant a small manless moon in the sky. The sketches o these pages show why a velocity of 18,000 which is 5 miles per second, would m.p.h., keep it up until doomsday if nothing knocked it off its course.

A cargo of instruments permanently placed above the blanket of air in which we dwell could tell us a lot of things that no one nows now. If, say, the instruments were to weigh 200 lb. (which is a lot of instruments Bowadays), and the cart in which they were placed were to weigh 800 lb., they could be accelerated to 18,000 m.p.h. by a step rocket weighing a trifle less than 119 short tons. This could be done with known fuels.

How the total weight would be divided among the three parts of the rocket is indicated alongside the drawing on page 107. I have assumed, in these computations, that each step the ratio between the total fueled eight and the combined hull and payload reight would be 3.5 to 1 and that the veloc- y of the exhaust blast would be 7.500 feet per second. These are plausible assumptions, and my conclusions are based on Newton's third law of motion.

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They could be fitted into the hull of th
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Such a mighty missile's ascent
begin rather slowly. The air would
less resistance as it climbed and it
gain speed faster. At 30 miles up, it
be going about a mile a second.
To get it out of the dense, lower
MAY

[PAGE BREAK]

ROCKET
PATH OF
FIRST ROCKET
Imaginary mountain, towering h
above earth's atmosphere, represe
point in space where orbital rock
would be launched. Any slow-mo.
rocket fired from top of this mounta
would eventually strike the earth
since it would fall faster than the
earth's surface would curve away be
neath it. When velocity is 5 miles pr
second, however, distance rocket foll
exactly equals distance earth's sur
face curves away-eight inches every
mile. Thus, though rocket keeps fall-
ing toward the earth, the earth keeps
bending away from it, and it can
never land. Broken line shows how
path of slow rocket, if continued,
would form ellipse; path of orbital
rocket would form ellipse in same way.
SECOND ROCKETISE
FIRED FROM FIRST
NEAL PEAK OF ITS
TRAJECTORY
EARTH'S CENTER
PATH OF
SECOND ROCKET
Using two rockets, one fired from

the other, would accomplish same thing as launching single rocket from imaginary mountain on previous page. First rocket, fired nearly straight up, would carry to well above earth's atmosphere. Then second rocket, fired from first one near peak of its trajectory, would be placed in path almost at right angle to earth's radius. This rocket, traveling at 5 miles per second, would then. enter permanent orbit around earth while first rocket dropped back. Actual at-
*tempt would probably require 3-step rocket, but principle would be the same. Note that two rockets' elliptical paths would both have earth's center as one of their two focal points.
ve of 18,000 m.p.h. would be enough to
ep it going around and around like the
on. That velocity could be attained with
ep rockets," which are simply two-in-one
three-in-one rockets.
Such rockets are the only known kind that
ld make full use of a testing range 3,000
es long. And that, you cannot be criti-
ed for noting, is the length of the range
t U. S. defense chiefs now want.
Two-Step Rocket Tried
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The Germans knew that step rockets would actually work. They used a small, three-step, solid-fuel rocket called the Rheinbote ("Messenger from the Rhine") for long-range bombardment work during the battle for Antwerp. That American experts who have picked the Germans' brains are working on booster rockets is no secret (see p. 116).

To an uninformed bystander, a three-step rocket capable of delivering a half-ton moon might look like a single one. Since the two inner rockets would operate above the atmosphere, they need not be streamlined. They could be fitted into the hull of the first big booster without a cubic inch wasted.

Such a mighty missile's ascent would begin rather slowly. The air would offer less resistance as it climbed and it would gain speed faster. At 30 miles up, it should be going about a mile a second.

To get it out of the dense, lower atmos-

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ROCKET'S MOVEMENT
AROUND EARTH
IN 50 MINUTES
AT 22 300 MILES UP
FULL REVOLUTION
TAKES 24 HOURS
50 MINUTES AT
3,100 MILES UP
50 MINUTES AT
470 MILES UP

Time required for orbital rocket to make complete revolution about earth depends only on distance away, which determines how far it must go to get around. Drawing above shows orbiter's movement at three different altitudes. At 22.300 miles, rocket would take 24 hours to complete full revolution and would thus appear fixed over earth. At 3.100 miles, it would require 200 minutes, at 470 miles, only 100 minutes.

phere as quickly as possible, the rocket probably would be shot straight up. Then the trajectory could be slowly tilted. The deviation from a vertical path might not be more that 15 during the first step. This tilting from the vertical might increase during Step 2 and continue to do so in the final step until the rocket traveled along a line at a right angle to the radius of the earth during the last few seconds of its fuel's burning time.

But for the resistance of the air when the rocket first left the earth, it should be going 5 1/3 miles per second then. That's over a third of a mile per second faster than necessary, but much of this excess would have

been lost while the rocket was passin through the atmosphere.

At a velocity of 5 miles per second, the rocket's directional inertia-the tendency to keep on a straight path-would combine with the force of gravity-tending to pull i earthward-to set it on a curving path around the earth. These forces of inertia and keep the moon in its orbit and the planets in theirs, and they would keep this scooter full of instruments circling the world in a similar orbit.

rything material put into space will ume one, since it will receive radiat from the sun and radiate energy in t How much will be absorbed and how m

will be re-radiated will depend on the biter's surface smoothness, its heat con tivity, its color, and many other factors. Another interesting phenomenon woul in temperature when the or entered the shadow of the earth, as it w once during every revolution. Knowl of this temperature fluctuation would great interest to designers of long-range ales that might take off at night in the ca shadow and then leave it, or vice versa the drop

gravity

The trajectory of every long-range or high-altitude rocket is an ellipse, and in every case one of the two focal points of the ellipse coincides with the center of the earth, The orbiter would be no exception. Its orbit would be an ellipse, but this ellipse might be so short and fat that in a small drawing it would look like a circle.

The time required for a complete revolu tion around the earth would be governed by a single factor: the new "moon's" distance from the earth. The farther it is from us, the longer it will take to go around.

Choose Your Orbit

If the distance from the ground were 470 miles (probably the minimum if we want to be sure to avoid even the last faint traces of air resistance), each complete revolution around the earth would take 100 minutes. This has the interesting result that the orbiter, when observed as a star, would "rise" in the West and "set" in the East. (It is assumed that it will be launched so that it would circle in the same direction as the earth rotates.) If its orbit were in the plane of the equator the rocket satellite could not be seen at all from higher northern and southern latitudes because the bulk of the earth would be in the way of the observer.

If the "orbiter" were to be placed 22,300 miles from the earth's surface, it would; neither "rise" nor "set" because it would need just 24 hours for one revolution and therefore seem to stand still over one spot. While this might be amusing, the scientists would probably prefer to have their sky wagon move with respect to the ground.

It also would be advisable for several reasons to have the rocket closer than 22,300

miles out, the limited range of the telemeter-
ing instruments being one of them.
One of the many mysteries that the in-
struments could clear up is the temperature
the orbiter itself would assume. Space itself,
being empty, cannot have a temperature, but
Would Aid Solar Research
The instruments on the new space
could also relay a complete spectrum
sun, Spectra taken on the ground lack
sections that are cut out by the atmos
More complete spectra have been obt
by means of high-altitude rockets, but
rockets stay at a high altitude for only
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Such an instrument probably would
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change the temperature of the ro
reducing its light-reflecting power
effect should be very strong, which
likely, it could even reduce the
visual brightness.
To send findings back to the gro
instruments would need a source of
some sort.
Batteries might not
enough. It might be possible, how
obtain the necessary power from th
of radioactive substances in a man
if developed, would certainly be to
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for this purpose. It should be possil
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To send findings back to the ground, the instruments would need a source of power of me sort. Batteries might not last long Dough. It might be possible, however, to btain the necessary power from the decay of radioactive substances in a manner that, developed, would certainly be top secret. Perhaps the sun's energy could be used or this purpose. It should be possible to dese thermoelements that, when heated by

PATH OF ROCKET
PATH OF METAL-DUST CHARGE PARTICLES RE-ENTERING ATMOSPHERE WOULD GLOW LIKE METEORITES
100 MILES
EARTH

Attempt to put "artificial meteorites" into space was tried by Army more than a year ago by firing "shaped charges" from the head of a V-2 (PS. March 47, p. 66). Consisting of a sheet-metal "liner" blasted apart by high explosive, the charges produced a high-speed jet of fine metal dust. It was hoped that some of the metal particles, fired from the V-2 100 miles up, would carry an additional 100 miles or more, leave the atmosphere, and then be detected upon re-entering. Whether or not experiment was successful has not as yet been made public.

the sun at one end, would produce enough electric current for this purpose. Rather long antennas could be provided quite easily by having coiled-up steel wires in the head that would be released after the acceleration of the rocket stopped, sticking out as shown on the cover. These wires would also increase

[PAGE BREAK]

the size of the orbiter and make it a better radar target.

This brings us to the "passive" uses of

such a vehicle-uses that would result simply from its existence. The problem of guiding very long-range missiles-say 3,000 miles or more-always raises the question of reference points. Astronomers are apt to point out that the star Regulus would be a fine reference point for various reasons. That would no doubt be true for space ships manned by navigators trained to recognize Regulus when they saw it. But a mere guiding mechanism might conceivably be fooled by a few dozen other stars. Even a robot, however, should not mistake an orbital rocket, from which a radar signal could be bounced back, for a distant star.

for

Navigating by Orbiter

Designers of guiding mechanisms missiles are working on four methods. One is a two-beam system, with one beam on the target and one on the missile to provide it with orders that originate on the ground The second is a one-beam system in which the beam is put on the target and the missile's mechanism is so designed that the missile returns to the beam whenever it accidentally leaves it. The third is the so-called "homing" mechanism. And the fourth is to teach the missile to do its own navigating. But when the navigation must be done over very long distances, it must be celestial navigation-and that is where an orbital rocket could be helpful.

It could perform similar service, of course. for a human navigator. If the orbiter could be made "visible" (not necessarily to the eye) to navigators of ships and aircraft, it would be a fine reference point for them. These human navigators have reference points now in the natural celestial bodies, but navigating by them at high speeds with portable instruments is not easy. An orbiter traversing almost two degrees of arc every half minute, along a predetermined course, would be a big help.

The idea is old. Computing the natural moon's orbit is such a tedious, difficult task that a French astronomer suggested a century ago that there ought to be a second smaller moon. None was ever found. But you may live to travel in a 10,000-m.p.h. plane, led to its destination by a man-made

moon that simultaneously is radioing essential information to the engineers designing a ship for the first flight to Venus.
112 POPULAR SCIENCE
END
Army's two-step rocket cleared most of earth's atmosphere when it reached record height of 250 miles. Consisting of small Wac Corporal fired from nose of larger V-2, it also hit record speed of 5,000 m.p.h. Orbiter would have to go 3½ tunes faster but less than twice as high.
Rifle Safety Can't Forget
vice.
HERE'S a rifle that you can't load without automatically locking a fool-proof safety de It is a new .22-caliber, single-shot bolt-action Winchester (right) designed es pecially for young and inexperienced shoot ers. The very act of loading, pulling back the bolt handle, makes it impossible to fire the rifle. And with the cartridge in place you can't shoot it until you manually pusl back the safety lever, uncovering a re warning dot. The Model 47, taking eithe 22 short or long cartridges, with a choice sights, sells for around $20.
SAFETY FORK
TRIGGER BASE
BLOCKED BY
SAFETY FORK
TRIGGER
SAFETY LEVER ON
BOLT HANDLE
The action of loading, as illustrated in ab photo, pushes back forked safety lever. tine of the fork gets in the way of trigger b and prevents it from hitting the firing pin.
Parajumpers Carry

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VOLUME 154, NUMBER 5
PAGES: 106-112
AUTHOR: WILLY LEY

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RITER
Is U.S. Building a "New Moon"?
PAGE 106

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STEP 3
STAYS UP
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FALLS BACK
STEP 1
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By The United Prest

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come "second moon," circling earth like real mo
STEP 1
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TAKE-OFF
WEIGHT
New Moon?
One rocket has already pierced the
earth's atmosphere; a faster one
might leave it and circle forever.
By Willy Ley
Author of "Rockets and Space Travel
Drawings by Jere Donovan
THE Secretary of Defense has co-ordinated

"earth satellite vehicle" research by the
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A 3,000-mile rocket-testing range has
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Curtiss-Wright foresees a 10,000-m.p.h.
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ter of highest secrecy." So the men who
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you may have heard, and some of the head-
lines, have been preposterous. But, beyond
a shadow of possible doubt, American scien-
tists and engineers are working on an orbit-
MAY 1949 107

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POPULAR
SCIENCE
STEP 3
STAYS UP
STEP 2
FALLS BACK
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First step of 3-step rocket should carry "satellite" above atmosphere and give it a velocity of about 5,500 feet per second by time fuel in this step is exhausted. Next ster should send rocket higher and increase velocity to 14,000 feet per second. Final step should boost velocity to neces sary 5 miles per second. At this speed, rocket should be come "second moon," circling earth like real moon
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He did not
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106 FOART
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July 1949
Popular Science
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MOON
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Building A New Moon (PSMay 49, 106]. He states that a 10,000mph cvett could never

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Take 1/2" to 40" 1. D.'s easily and accurately with
LUFKIN
INSIDE
MICROMETERS
CHECK THESE
FEATURES
which combine to make your work

of taking inside
measurements
rapid, accurate
and free of errors.
Tubular, light-weight measuring rods can be
added to both ends of the micrometer head,
thus keeping the head central and in balance,
assuring precise readings-more sensitive "feel."
Ground threads on
micrometer heads
assure smooth oper
ation and great accu-
racy. Rods and caps
ground to extremely
close limits to permit
interchangeability.
Heads have "Rapid
Reading" (each thou-
sandth numbered) to
eliminate errors in
reading. Lock nut holds measurement firmly.
Flat surface on knurled
collar opposite reading
line makes it easy to
instantly find reading
line even in poor light.
Write Dept. S for fascinating
booklet, "The Amazing Story of Meas-
urement." Enclose 10c (no stamps)
to cover handling and mailing.
Buy LUFKIN
Precision Tools • Tapes • Rules .
The Lufkin Rule Company
8 POPULAR SCIENCE
The AMAZING
MEASUREMENT
FROM YOUR DEALER
Saginaw, Michigan
e ers
Blackett on the Bomb
Sir:
I fully understand that there are many
points in my exposition [of the atomic
bomb's role in a war between major powers]
that are open to doubt and criticism. You
are certainly correct in supposing that cer-
tain key target systems such as oil might
be a vulnerable point in a country's defense.
Clearly if this is so, then the defending
country is likely to be extremely secret
about the location of its reserves, storage,
plants, etc. It is not possible to be quite

sure what would happen in a future war with atomic bombing against Russia, and it is possible that the Russian oil industry could be effectively destroyed. However, I do not feel that this is by any means certain.

P. M. BLACKETT
The Physical Laboratories
The University, Manchester, England

Nobel-prize-winner Blackett is the author of "Fear, War, and the Bomb." His views were summarized and criticized in PS (May '49, p. 124).

Old Idea. New Difference

Sir:

It is interesting to note that the fixed "convertible" type idea is not new, but was used by Studebaker almost twenty-five years ago, PS, May, page 134. The Studebaker Duplex Phaeton came in three sizes: Standard Six, Special Six, and the Big Six. The price of the Special Six sedan as of November 1924 was $2,150. The price of the Special Six Duplex Phaeton was $1,495, nearly $700 less. Today, the fixed convertible models sell for as much as $1,000 more than the sedan models.

JAMES M. STRONG, JR.
West Hartford, Conn.

How to Make a Moon

Sir:

Willy Ley usually has no trouble backing up his statements, and I am curious to see if he can prove one he makes in "Is U. S.

INVENTOR

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

A patent gives the inventor the exclusive right to prevent others from making, using, or selling the invention claimed in the patent for a period of seventeen years.

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NAME
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KRAF
could never slip out of the grip of earth's gravity. If he means that this holds true with those fuels we now have at our disposal, he is probably right.
But we should some day, in the not-too-distant future, perfect an atomic drive for space craft. With an ample fuel source, such as an atomic drive would have, what is to prevent a space craft from accelerating to 10,000 m.p.h. and holding that speed with the power on until it reaches the neutral point of gravitational influence between the earth and the moon, or even Mars or Venus?
Denver, Colo.
Sir:
NEIL J. CRANDALL
Why a three-stage rocket? The exhaust velocity of five miles per second can easily be reached with hydrogen and oxygen fuel.
Felton, Calif.
DONALD RADFORD WRIGHT

Let Willy Ley speak for himself:
Since the whole article was devoted to the proposition of an orbiter with chemical fuels, atomic energy was clearly not under consideration.
The reason for making the rocket a three-step rocket, and for calculating the weights which I used in my article, is that I wanted to show that the orbiter could be established by the use of well known and well tried fuel combinations, namely watered alcohol and liquid oxygen. I know, too, that hydrogen will produce higher exhaust velocities-in fact almost three times as high as those used in my calculations. But it is not yet a well tried fuel; we don't know how long the motor would stand up.
Besides, hydrogen is not quite as wonderful as its high exhaust velocity may seem to indicate. Because it is of very low density, even when liquid, the rocket would need very large tanks, which would reduce the ratio between take-off weight and dead weight.
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Sir:
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Look
VOLUME 13, NUMBER 16
JULY 31, 1951
H
Chepley Bonestell
HOW WE COULD WAGE A
WAR
FROM MAN-
MADE STARS
A rocket satellite that would circle the
earth forever 350 miles up is today a
practicable idea with vast possibilities
for war and, later, the conquest of space
By WILLY LEY Rocket Expert and Astronomer
Drawings by CHIESLEY BONESTELL
C. Bonestell drawing shows satellite rocket at
take-off Part to stay up is shiny section in nose
(Continued on page 22)

[PAGE BREAK]

MAN-MADE STARS continued
WHOLE
EARTH
HOW SATELLITE ROCKET WOULD REACH ITS ORBIT
STEP 2
FALLS TO EARTH
(ABOUT 900 MILES
STEP 3

BEGINS ORBIT
equipped
meteorolo
STEP 1
FALLS TO FARTU
FROM TAKE OFF POINT)
from a ro
could be seen through TV installed
in rockets, showing foe's moves
A
ROCKET that will stay up in the sky like a
star and serve as a platform for the con-
duct of a war is today a practicable idea
It's even possible that a project is already
under way to build one.
Whether such a project has been begun
no one can say. The United States Government,
which would be the only possible sponsor of an.
endeavor of this kind, isn't talking
But the Government is known to be in-
terested in the idea. It has financed two stud
ies on conditions beyond the earth's atmos
phere. And in the last report written by the
late Secretary of Defense, James Forrestal
reference was made to "studies of the satel
lite vehicle project."
Exactly what that phrase referred to isn't
known. It is a sober fact, however, that a rocko-
et that circles the earth like a satellite is liter
ally the next goal of rocket engineering
is something that could be accomplished with
well-known rocket fuels, and no new discov-
ery or major invention would have to be made
first. It is something on which one could go
to work now.
To a rocket engineer, the Idea is as fea-
. sible as a 100,000-ton ocean liner is to a naval
engineer. No liner of such size has been built
yet, and building it would take some time. But
nobody, doubts that it could be done.
Likewise, no rocket of the necessary size
and weight to reach the height of a circling
satellite has been built yet, and it could not
be built in a week or a month. But those who
are able to judge have no doubt that it could
be done, and for probably not more than 50
million dollars.
Would Give Us Space Data
If one were built, it could play a decisive
role in a war. Circling the earth like an express
moon, a "satellite rocket"-or "orbital rocket,"
as it is also known-could be used in a variety

of ways to bring military victory.
In guided-missile warfare, for instance, the man-made satellite would be to the new weapons now being developed in that field what radio control is to a pilotless plane.
One of the main difficulties with long-range missiles is that they have to dd their own navigating. The guiding techniciah, on the ground, can assist the missile for only a comparatively short distance-for radio and
Willy Ley, author of this article, pioneered in rocket work in his native Germany before coming In '35 to the United States, of which he's now a citizen. Ile is the author of Rockets, Missiles and Space Travel, recently published by the Viking Press.

Man-made satellite could be sent high enough to circle earth forever with three-step rocket: lowest section lifts whole 30 miles, then drops; next, second step takes over, third step covers last lap..

radar waves are not effective beyond the horizon for this purpose. After that, the navigating mechanism must. be provided with another reference point for almost instantaneous corrections. The long-range,missile does not need to get very far off course to miss a target by 50 miles or more.
It would be possible, of course, to have a relay of ships across the ocean which would take over the guiding; a technician on each ship would "hand" the missile to a colleague on the next ship after it passed by, and so on. But the enemy would be well aware of what was going on and could do something about it.
It might also be possible, perhaps, for the missile to bounce a radar echo off the moon and thus follow and correct it's course itself. But the moon is 239,000 miles away, and doing■ that would require a rather powerful radar set. It wouldn't be too difficult for a radar set on the ground. But it would be an almost impossible task for one light enough to be put into a missile. And the radar impulse would need 2 seconds to go to the moon and come back. That delay, even if it didn't ruin the

steering at a critical moment, would have to be accounted for and a means of correction would have to be built into the mechanism.

If there were a satellite rocket in space, however, the problem of holding the missile. on course would be much simpler. The time delay in getting a radar echo from a satellite just beyond the earth's atmosphere would be about 1/200th of a second, thus the radar set could be much smaller.

This is just one possibility of the man-made satellite. And it would derive from the mere presence of the orbital rocket in the sky. If that rocket were more than just an empty shell and were fitted with Instruments, the possibilities would be many more.

The high-altitude research rockets of today already carry a complex set of scientific equipment. Into a satellite rocket, one could equally well put a television camera. With such a device, an observer on the ground would be able to see the earth as viewed from hundreds of miles up. The picture would not be just a single view, as in one of those photographs that have been taken from rockets in the upper stratosphere. It would be a continuous picture showing everything in the rocket's line of vision as it moved around the earth.

With one or several such TV-equipped watchdogs in the sky, it would be impossible for an enemy to mass troops and fleets without being observed. Of course, the rocket would not be able to see through an overcast, but there are not too many areas on earth where overcasts last for weeks without a break. The effect would be to give us ample warning in the event a foe prepares any large-scale aggression, and perhaps to guarantee us against another Pearl Harbor.

In another important aspect of military preparedness-meteorology-an orbital rocket

View of earth like this "shot" of Korea would be possible with a rocket satellite equipped with

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equipped with TV would be invaluable. A meteorologist, watching a TV transmission from a rocket, would get a far better insight into the weather) brewing over large areas than he could from the customary weather map, which needs many weather stations and many hours of work to assemble. He might miss some fine detaifs somewhere, but his over-all picture would be much better.

Rocket Would Aid Navigation

These are just some of the vast military possibilities of an orbital rocket today.

For peacetime purposes, the satellite rocket offers still other possibilities. Equipped with scientific instruments, it could give us valuable material on conditions in interplanetary space near the earth It would be invaluable in navigation, for its position at any given time would be known exactly, this would make it possible for ships and civil planes to get precise "fixes." And, equipped with a TV camera, a man-made satellite might even be a substitute for the iceberg patrol

With further research and experimentation, an orbital rocket holds the promise of almost unlimited uses in both peace and war.. But right now, almost nothing except the job of putting one together stands in the way of having a man-made satellite Rocket experts are no longer theorizing about one. They are

already considering design detail-thinking in terms of weight quotas and desired speeds.
To put an artificial satellite into 'space, the experts know, would require a rocket weighing some 110 tons at take-off and standing about 70 feet high. The mbst massive rocket so far, the ex-German A-4, better known as the V-2, stands over 46 feet high and weighs around 121 tons
This may seem to leave us with a long way to go. But near the end of the war, the Germans ready wer drawing plans for a rocket standing around 60 feet high and weighing some 85 tons. The required size for an orbital rocket begins to look more or less like a real possibility when you know this.
That figure of 110 tons does not mean that the rocket that gets into space would weigh that much. It would weigh only about 1000 pounds, or half a ton The difference of 109% tons is what would be needed to lift that half ten against the earth's gravity through the atmosphere and provide it with the necessary speed to stay in space.
Once in its orbit, the half-ton rocket would neither "fall down" nor need any fuel to re-
a TV camera. If sent up in right direction and given enough speed to circle earth several times a day, TV rocket would be able to scan most of inhabited areas of earth, warn of enemy concentrations main where it is. It would behave just like our natural satellite, the moon. This shows no inclination to fall on our heads and does not need fuel to keep itself going The reason is that the speed at which the moon moves in its orbit creates just enough centrifugal force to counterbalance the earth's gravity at that distance
For the moon, at a distance of 239.000 miles, a velocity of 2 of a mile per second is enough to establish equilibrium Moving so slowly, as cosmic velocities go, the moon needs.
about a month to go around the earth once If it could be still slower
it were farther away.
in its orbit. But if it were closer, it would have to speed up to remain a satellite.
At a distance of 22,300 miles, for example. the moon would have to move at about 2 miles per second and would get once around the world in 24 hours. At a distance of slightly over 1000 miles, it would have to travel at 44 miles per second and race around the earth in two hours. And if it were low enough just to clear the highest mountains in its path (an impos

sibility in reality, of course, because of air resistance), it would have to move at a speed of 5 miles per second and swing around the earth once in a little over one hour, 20 minutes.
These facts about our natural satellite. which astronomers have no trouble in calculating, also hold true for a man-made satellite
Our first problem, then, has been to find out just how high a useful artificial satellite should be
Naturally, it must be above the atmosphere of the earth or else air resistance would cause it to crash after a few revolutions. The highest a rocket has reached so far is 250 miles. a feat that was accomplished for the first time on February 24, 1949, from the White Sands Proving Ground in New Mexico
That altitude is not a great deal less than the altitude that would have to be reached to keep a rocket satellite in the sky At 250 miles.
(Continued on next page)
With orbit at a 45-degree angle to the equator, rocket would "see" more than with an east-to-west orbit

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At a distance of 22,300 miles, for example. the moon would have to move at about 2 miles per second and would get once around the world in 24 hours. At a distance of slightly over 1000 miles, it would have to travel at 4.4 miles per second and race around the earth in two

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(Continued on next page)
With orbit at a 45-degree angle to the equator, rocket"
would "see" more than with an east-lo-west orbit

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MAN-MADE STARS continued
the "air" is so thin that the number of air
molecules per cubic inch is less than the num-
ber of air molecules in the best vacuum we can
produce in a laboratory on the ground. And a
satellite rocket circling at that altitude would
stay up there for quite some time, although
eventually it would crash because air resist-
ance would slowly, in the course of many
months, cause it to lose velocity. The reason
that no rocket fired that high has stayed up for
a time is that it has followed a vertical course
and has not had the horizontal movement need-
ed to counteract gravity when its fuel wis
exhausted.
How much farther would we have to go
them to get a rocket completely out of the
atmosphere and keep it circling forever? Not
a great deal farther. A hundred miles above
the highest point reached so far would do it.
And that today is quite possible
It could be done by using a trick that
has already been tried out. It is a trick by
tneans of which the altude of 250 miles was
reached on February 24, 1949. The rockpt

which climbed to the fringes of the carts
atmosphere was not a single rocket; it was
what rocket engineers.call a step rocket. In
that particular case, it was an ex-German V-2.
carrying as its "pay load an American-made
rocket of the type known as "WAC-Corporal"
The V-2 took off vertically in the show
and stately manner of a large rocket, then
moved faster and faster until, after 65 seconds.
it had used up its eight tons of fuel and ad
reached an altitude of 20 miles. At that mo-
ment, it was going at a rate of almost one mile
per second.

Second Step Takes Off

Just before the fuel supply of the V-2
gave out, the WAC-Corporal lifted itself out
of the bigger rocket. The V-2, although no
longer under power, kept climbing, since it had
a very considerable velocity, and reached an
altitude of about 100 miles. But the WAC-
Corporal, having added its own velocity of
about half a mile per second to the mile per
second it had been handed by the V-2, raced
ahead,and coasted to a peak altitude of 250
miles. It reached that point at about the time
the larger lower step" was about to crash on
the proving ground.

To give a rocket enough velocity to take
up an orbit around the carth, at about 350 miles
ultitude, a three-step rocket would be re-
quired. You can visualize this by imagining
the two-step rocket of 1949 placed on top of a
still bigger rocket

The whole would be fired vertically, as

A STATION
IN SPACE

to refuel rockets on way to Mars is next step after satellites

usual, because a large rocket cannot take off at
a slant. After the take-off, it would continue
to rise vertically at first and then be tilted in
the direction in which the satellite is to travel.
The ryechanism that does this tilting, and does
it accurately, is already in use.

At about 30 miles' altitude, the first step
would be almost exhausted but would be going
at a rate of better than a mile per second. Then
the second step would lift out, going faster and
faster and tilting still more in the direction the
satellite is to take

By the time the first step crashed-or,
rather, was destroyed in the air some 100,000
feet above the ground so that it wouldn't erash

in one piece the third step would be ready to lift out of the second. And by the time the second step crashed or was destroyed near the earth, some 800 or 900 miles from the take-off point, the third step would be in its orbit some. 350 miles above sea level.

Its speed at that altitude (the precise figure is 346 miles) would be 4.7 miles per second, which would swing tlfe satellite around the earth forever once every 96 minutes. That happens to be a figure that fits neatly into our 24-hour day. Such a satellité would make 15 complete revolutions per day"

The number of revolutions a satellite made a day would not be important, however. It would be about as valuable for it to make 12, 14 or 18 revolutions per day. What would be important would be for the orbital rocket to make a given number of complete revolutions each day That would mean that the rocket would be vertically over a certain point, say Kansas City, every day at precisely the same instant-a most practical advantage for navigational and other purposes.

Just as important would be the direction in which the man-made satellite raced around the earth. If one fired a rocket from a mountaintop in Ecuador so that it sped around our planet above the equator, the result would be an interesting experiment of little practical use.

The reason is that a satellite rocket, at

Rocket satellite would serve vital function in long-range guided-missile warfare. Using radar, goided missile could get "fix" from satellite as well as check its altitude, correct course accordingly.

MILITARY APPLICATION OF ORBITAL ROCKET
RADAR TO ROCKET
(FOR POSITION]
CRUISING MISSILE
RADAR TO GROUND
(FOR ALTITUDE)
ROCKET IN ORBIT
TELEVISION (30° CONE OF VISION)"
SURFACE OF EARTH

the comparatively low altitude of 350 miles and traveling along the equator, could be observed by only a small number of people. It would be visible only to those living in the tropics but could not be seen from anywhere else.

There is no reason, however, why an orbital rocket should have to circle the earth over the equator The orbit could just as well be slantwise

Effect of Slanting Orbit

If the rocket's orbit and the equator formed an angle of 45 degrees, the rocket would seem to move from the equator to the 45th parallel in the north (New York City is about on the 41st parallel), then go south again, cross the equator and continhe south to the 45th parallel in the Southern Hemisphere. The motion of the rocket and the turning of the earth around its axis would combine to form a number of S curves.

On one of these S curves, the rocket, coming from the equator over the Pacific Ocean, would appear over the North American Continent above the Los Angeles area, slant across Arizona and Colorado, passing over Denver, and continue over Omaha, Neb, and on across Lake Huron to leave America over the Maine coast

Later, it would appear over the Canary Islands and slant across French West Africa Nigeria, the Belgian Congo, northern Rhodesia and Portuguese East Africa. Then it would pass just south of Madagascar and later veer north again and appear over the Asian mainland.

In the course of a single day, the rocket would be vertically or almost vertically over every point of the earth between the 45th parallel in the north and the same parallel in the south and would be visible from any inabited point except Alaska, Greenland, and northernmost portions of Scandinavia and parts of northern Siberia,

like?

What would the artificial satellite look

Although the third step of the rocket forming the satellite would not be very large, it would appear as a very brilliant star visible to the naked eye. It would be impossible to confuse it with any other star, for it would move perceptibly, covering the are from horizon to horizon in about 20 minutes.

But it would be visible only at dawn or dusk, when it would gleam with the reflection of the sun's rays. It would be invisible at night because the rocket would be in the shadow of the earth. Nor could it be seen during the day, it would be invisible then against the blue of the sky. At those times, however, it could still be spotted, of course, by radar.

The only step needed to build such an orbital rocket is the adaptation of techniques

in use right now. It is mostly a question of en-
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Space
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MAN-MADE STARS continued
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the "air" is so thin that the number of air molecules per cubic inch is less than the number of air molecules in the best vacuum we can produce in a laboratory on the ground. And a satellite rocket circling at that altitude would stay up there for quite some time, although eventually it would crash because air resistance would slowly, in the course of many months, cause it to lose velocity. The reason that no rocket fired that high has stayed up for a time is that it has followed a vertical course and has not had the horizontal movement needed to counteract gravity when its fuel wis exhausted

How much farther would we have to go: then, to get a rocket completely out of the atmosphere and keep it circling forever" Not a great deal farther. A hundred miles above the highest point reached so far would do it. And that today is quite possible

It could be done by using a trick that has already been tried out. It is a trick by tneans of which the altide of 250 miles was feached on February 24, 1949. The rockpt which climbed to the fringes of the carts atmosphere was not a single rocket; it was what rocket engineers.call a step rocket. In that particular case, it was an ex-German V-2. carrying as its "pay load an American-made rocket of the type known as "WAC-Corporal" The V-2 took off vertically in the show and stately manner of a large rocket, then moved faster and faster until, after 65 seconds. it had used up its eight tons of fuel and ad reached an altitude of 20 miles. At that moment, it was going at a rate of almost one mile per second.

Second Step Takes Off

Just before the fuel supply of the V-2 gave out, the WAC-Corporal lifted itself out of the bigger rocket. The V-2, although no longer under power, kept climbing, since it had a very considerable velocity, and reached, an altitude of about 100 miles. But the WAC-Corporal, having added its own velocity of about half a mile per second to the mile per second it had been handed by the V-2, raced ahead,and coasted to a peak altitude of 250 miles. It reached that point at about the time the larger "lower step" was about to crash on the proving ground

To give a rocket enough velocity to take up an orbit around the carth, at about 350 miles ultitude, a three-step rocket would be required. You can visualize this by imagining the two-step rocket of 1949 placed on top of a still bigger rocket.

The whole would be fired vertically, as

A STATION IN SPACE

to refuel rockets on way to Mars is next step after satellites

usual, because a large rocket cannot take off at a slant After the take-off, it would continue to rise vertically at first and then be tilted in the direction In which the satellite is to travel. The ryechanism that does this tilting, and does it accurately, is already in use.

At about 30 miles' altitude, the first step. would be almost exhausted but would be going at a rate of better than a mile per second. Then the second step would lift out, going faster and faster and tilting still more in the direction the

satellite is to take.
By the time the first step crashed-or, rather, was destroyed in the air some 100,000 feet above the ground so that it wouldn't crash in one piece-the third 'step would be ready to lift out of the second. And by the time the see-ond step crashed or was destroyed near the earth, some 800 or 900 miles from the take-off point, the third step would be in its orbit some. 350 miles above sea level.
Its speed at that altitude (the precise fig-ure is 346 miles) would be 4.7 miles per second, which would swing the satellite around the earth forever once every 96 minutes. That hap-pens to be a ligure that fits neatly into our 24-hour day. Such a satellité would make 15. complete revolutions per day.
The number of revolutions a satellite made a day would not be important, however. It would be about as valuable for it to make 12, 14 or 18 revolutions per day What would be important would be for the orbital rocket to make a given number of complete revolutions each day. That would meag that the rocket would be vertically over a certain point, say Kansas City, every day at precisely the same instant-a most practical advantage for navi-gational and other purposes
Just as important would be the direction in which the man-made satellite raced around the earth. If one fired a rocket from a mountain-top in Ecuador so that it sped around our planet above the equator, the result would be an in-teresting experiment of little practical use
The reason is that a satellite rocket, at
Rocket satellite would serve vital function in long-range guided-missile warfare. Using radar, goided missile could get "fix" from satellite as well as check its altitude, correct course accordingly.
MILITARY APPLICATION OF ORBITAL ROCKET
RADAR TO ROCKET
(FOR POSITION)
USING, MISSILE
RADAR TO GROUND
(FOR ALTITUDE)
ROCKET IN ORBIT
TELEVISION (30° CONE OF VISION)
SURFACE OF EARTH
the comparatively low altitude of 350 miles and traveling along the equator, could he ob-served by only a small number of people. It would be visible only to those living in the tropics but could not be seen from anywhere else

There is no reason,, however, why an orbital rocket should have to circle the earth over the equator The orbit could just as well be slantwise.

Effect of Slanting Orbit

If the rocket's orbit and the equator formed an angle of 45 degrees, the rocket would seem to move from the equator to the 45th parallel in the north (New York City is about on the 41st parallel). then go south again, cross the equator and continhe south to the 45th parallel in the Southern Hemisphere. The motion of the rocket and the turning of the earth around its axis would combine to form a number of S curves.

On one of these S curves, the rocket, com-- ing from the equator over the Pacific Ocean, would appear over the North American Continent above the Los Angeles area, slant across Arizona and Colorado, passing over Denver, and continue over Omaha, Neb, and on across Lake Huron to leave America over the Maine coast

Later, it would appear over the Canary Islands and slant across French West Africa Nigeria, the Belgian Congo, northern Rhodesia and Portuguese East Africa Then it would pass just south of Madagascar and later veer north again and appear over the Asian mainland.

In the course of a single day, the rocket would be vertically or almost vertically over every point of the earth between the 45th parallel in the north and the same parallel in the south and would be visible from any inhabited point except Alaska, Greenland, and northernmost portions of Scandinavia and parts of northern Siberia.

like?

What would the artificial satellite look

Although the third step of the rocket forming the satellite would not be very large, it would appear as a very brilliant star visible to the naked eye. It would be impossible to confuse it with any other star, for it would move perceptibly, covering the are from horizon to horizon in about 20 minutes.

But it would be visible only at dawn or dusk, when it would gleam with the reflection of the sun's rays. It would be invisible at night because the rocket would be in the shadow of the earth. Nor could it be seen during the day, it would be invisible then against the blue of

the sky. At those times, however, it could still be spotted, of course, by radar.

The only step needed to build such an orbital rocket is the adaptation of techniques in use right now. It is mostly a question of enlarging on
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Space
Mars

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larging on and refining what has been done
Of course, if a TV camera and scientific instruments were placed in a satellite rocket, such equipment would be unable to function after a time if there were no better way of furnishing the necessary power thah with batteries. To knep such equipment working for a long time would require a new invention like an atomic-energy power source.
What of the fature possibilities
Weff: the next thing after the first orbital rocket will probably be a second one, not diftering too much from the first except that it would run in a different orbit. across the poles This "circumpolar" rocket, as it has beencalled, would cover those areas that the first Rocket would not pass over. It would make it possible to see all of the earth, but it would be less u tul in its other applications, especially for

navigational purposes and for missile guidance
One thing that will not be done, although
at has been discussed by some as to put atomic
bombs into orbits around the earth and to have
them drop on specific targets in a war. This
scheme sounds both intriguing and frightening,
but it is not practicable
In the first place, it would be very diflicult
to make a rocket returning from an orbit lit
a specific place by remote control. Second, if
one nation surreeds in building rockets that
will put bombs into space, another nation.
sooner or later will succeed in building rockets
to explode those bombs where they are. In the
und place, since it needs about a hundred tons
of rocket to put half a ton of bomb into space.
1 is far cheaper to transport the bomb over the
necessary distance without lifting it all the way
out of the atmosphere.
Possibilities of Space Station
In time, however, the unmanned orbital
rocket will certainly be followed by the
manned space station. As rockets grow larger
and larger, it will finally become possible to
build a large station from the parts of rockets
sent up for this purpose. Then there can be
human observers in space, capable not of bet-
1er performance but of better judgment than
even the best instruments. Then scientists will
be able to perform experiments under free-
space conditions. Then, too, it will be possible
to accumulate a fuel reserve in such a station
from winch a rocket that has come from the
earth can be refueled.
It may sound incredible at first hearing.
but it is a hard fact, which can be backed by
astronomical calculations at any time, that a
trip to Mars from a space station would be far
easier than a trip from the ground to a space
station. There is only one provision: that a
rocket ship can reptehish its fuel supply at the
station
Putting it another way, one may say that
a trip to another planet is a most diflicult proj-
ect; that the establishment of a space station
is a difficult project too, though not quite so
difficult; but that a trip to another planet from
the station, once it exists, is actually easy.
There can be no space station in the future,
however, if it is not preceded by an orbital
rocket in the near-present. By simple logic.
thus, the orbital rocket must be the first step

in the conquest of space.
And that step can be made now, serving eminently useful purposes by itself-for peace preferably, for war if necessary.
END
Space station like this to refuel ships going to Mars will be possible as size of rockets grows.

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posed to extend into the air. She didn't say how the boy was to vanish-as always.
An expert hypnotist killed the theory that mass hypnotism was used; he said that a crowd could not be hypnotised. Then someone for the defense said he had seen the trick performed. But it was in a narrow street, the houses on each side having verandahs. The performer used fuel which caused a smoke screen so it wasn't possible to see the top of the T
rope. The conditions were not in accur ance with the rules.
Another man said he had seen the trick but had arrived late when the roge was already extended.
Several Indian Army officers offered large rewards, to anyone who wo come forward to perform the illusion but the money remained intact. So the mystery was left-still unsolved. The conclusion must
be-"unproven."-
Francis White in The Listener (London)
Why Modern Man Has an Aching Back
HE PENALTY which modern man pays for his strong mind may be a weak back, suggests Dr. Clarence A. Splithoff in a report to The American

Journal of Surgery.

When man assumed the upright posture, he not only set himself apart from the animal kingdom, but he also set the stage for a series of low back ailments which have plagued him since, Dr. Splithoff said.

No other part of the skeleton is more subject to failure or deviation in development, the report explained, probably because the evolutionary process is still continuing-aimed at a gradua strengthening of the bones of the low back so as to support the greater stres of erect posture.

The spinal column of an infant is sim ilar to that of primates such as the chimpanzee-practically straight and not very strong. And even though the lower spine elongates with growth, and becomes somewhat stronger, it appar ently never develops sufficiently to pre vent the numerous aches and pains from which modern man suffers.

ONE OF THE ODDEST medical remedies ever conceived in the superstitious Middle Ages, was "weapon salve." When a person was wounded, the weapon which had inflicted the wound was anointed with "weapon salve," and then bandaged and cared for as carefully as if it were flesh and blood. The theory behind this practice was that there existed a peculiar magnetism between the weapon and the wound, and if the weapon were nursed the wound would heal. One disadvantage of weapon salves was that the weapon which inflicted the wound was often unobtainable.-American Journal of Pharmacy.

Hunting Africa's Unknown Animals

Condensed from The Toronto Star Weekly

Willy Ley

A CENTURY AGO a noted French scientist, Baron de Cuvier, stood before the French Academy and solemnly told its members that new zoological discoveries could be made only by delving into our planet's past.

The earth's crust doubtless harbored the fossil remains of countless extinct animals still unknown to science, he said. But as for living animals, he added dogmatically, there were no further important liv- animals left to discover.

ing
The amazing thing is that he was right for some three-score years and more. Fossil hunters won fame by unearthing the most incredible collections of extinct saurians and mammals. But no hunter of living animals returned from anywhere with astonishing news.
New butterflies and lizards from South America-yes. Some new rodents and small marsupials from Australia-yes. A lot of small and sometimes very interesting fishes from the bottom of the ocean and from obscure inland rivers, especially in the tropics-yes.
But nothing that would spill over from professional literature into the sea of daily newsprint and make an audible splash. Zoologists felt
From the May 18, 1946 issue of The Toronto Star Weekly,
inclined to agree with Cuvier wholeheartedly.
The single real important discovery made during those decades from about 1820 to about 1890, the finding of the Australian lungfish, did not get the attention it deserved until near the end of the century. And it was just at that time that new facts began to show how careless Cuvier had been.
The new century ushered in a series of very remarkable discoveries of new animals-and the skeptical attitude became more and more conciliatory as time went on and new discoveries kept coming in.
As regards the existence of undiscovered animals even now, well over a dozen decades after Cuvier, zoologists are inclined to be open-minded. They know that about 10 percent of the land surface of the earth-not even including Antarctica-is still virtually or completely unexplored.
A lot can be in hiding in that 10 percent. They know that the oceans still harbor not only one but many

mysteries-the accidental discovery (in 1938) of a fish believed to be extinct for more than 65,000,000 years taught a lesson.
Zoologists specializing in the animal trade are even more lenient. They point at certain spots on the

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globe and voice suspicions. Sumatra, for example, is known to harbor a "new" variety of rhinoceros, in addition to the well known type. Specimens have even been shot, but never under circumstances which permitted a complete scientific investigation.
New Guinea is said to be the home of a large marsupial, and Burma is believed to harbor a variety of deer, black in color and reported to have a strange call curiously resembling the barking of a dog. Even Europe may still boast an undiscovered animal in the Swiss and Austrian Alps, described as a large and very rare lizard.
But the "promised land" for still undiscovered animals is Africa. More precisely, it is the equatorial belt of Africa, stretching roughly 2,000 miles across the continent and extending for about 1,000 miles on either side of the equator. It is the Rainy Forest in that equatorial belt on which suspicion has been focussing for the last 40 years.
It is this territory which still harbors a number of "mystery animals," dimly known to science through incomplete-and not invariably trustworthy-reports. It is this section which has produced four major zoological discoveries within three decades.
The first was the okapi, a short-necked relative of the giraffe. First rumors of its existence reached the civilized world in about 1890 when

Sir Henry Stanley, reporting on one
of the pygmy tribes of the Congo
region, stated that they had a word
"atti" which meant "donkey"
that such "attis" were occasional
caught in pits.
To experts this statement
rather mysterious. No donkey
known from that section. It might
be one of the zebras, but zebra
Hunting Africa's Unknown Animals
from the forest bordering
toria Lake.
The animal is now known scien-
cally as "Hylochoerus." While
actually as large as a small
noceros it is by far the largest of
wild pigs of Africa and its fur is
avoid forests and those pygmi actually jet-black.
lived where the forest was dense
and most inhospitable.
Sir Harry Johnston decided that
it was either a variety of zebra
which did not mind forest environ
ment, or else an unknown animal
more or less resembling a donkey
He set out to investigate...and
now the books state that "Sir Harry
Johnston discovered the okapi
the Congo forest in 1900.'
Like the okapi it represents a
rm otherwise extinct and belong-
to former periods of earth's
story.
The discovery that there was a
Liberian variety, seemed to solve
another old zoological puzzle. In
a Dutchman, Dr. Dapper,
rote a ponderous description of
the Liberian coast, and mentioned
ree varieties of wild hogs occur-
nag there. Two were quite ordinary,
At first it was believed to be a
but the third was unknown.
new variety of zebra, but when two
Somebody guessed that Dr. Dap-
complete skins and a skull reached
London, the novel fact of a surpr's mysterious black hog was the
same animal which had been de-
viving short-necked giraffe was e
tablished and the Negro name okapi scribed in 1844 by a U. S. physician,
was officially adopted.

The range of the okapi is in the northeastern corner of the Rainy Forest. This region is called the Ituri Forest-and the Ituri Forest, the natives said, harbored an enormous wild hog, black in color and as big as a small rhinoceros.

The ferocious forest hog of the natives remained a riddle for a full quarter of a century. Then it found its solution, and the solution was simple: the animal existed. Capt. R. Meinertzhagen of the British East African Rifles discovered it in 1904, securing an imperfect skin that had come from the forest of Mount Kenya. He also obtained a Dr. Samuel G. Morton. All that Dr. Morton had to go by was the statement that the animal looked like a large pig, but he had a complete skull of that animal.

From the skull Dr. Morton established that the "big pig" was actually a relative of the hippopotamus, but of smaller size, "only" about six feet long. He called it "Choeropsis"; popular books referred to it as "pygmy hippo," it was believed that the animal was extinct.

But rumors about "large pigs" kept coming from Liberia. Some obviously referred to Hylochoerus, others sounded much more like

Choeropsis. But Choeropsis was extinct!

About 1909 the rumors became too plentiful and Carl Hagenbeck in Germany finally sent his best man, Hans Schomburgk, to Liberia in order to find the real reason for all this talk.

Something was to be discovered there, either the "extinct" Choeropi or else something entirely new. Every educated Liberian, colored or white, was fully convinced that Choeropsis was extinct. And the natives of the interior believed Schomburgk crazy, not because he

was looking for this animal which they knew well, but because he wanted it alive. One could, with luck and sharp weapons, kill a "nigbve" (as they called it) but one could not catch it alive.
But one year later Schomburgk brought live pygmy hippos back with him.
While Schomburgk was going after Choeropsis, an expedition of the New York Zoological society, consisting mainly of Herbert Lang and Dr. James P. Chapin, was trying to get a live okapi for the Bronx Park zoo.
Though they were unsuccessful, all unknowingly they discovered a new bird. They brought native headdresses back with them and examination at home showed that one of the headdresses contained feathers of unknown origin.
For more than 20 years, Dr Chapin was haunted by the mystery of these unidentifiable feathers. A chance discovery in a Belgian

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museum in 1936, consisting of an examination of two wrongly labelled stuffed birds, furnished a clue. These unidentifiable feathers had come from an African peacock (later called "Afropavo congensis"), a so far completely unknown bird. All that remained to be done was to verify its actual habitat.
Dr. Chapin did this by flying to Stanleyville. Afropavo turned out to be well known to native hunters. It has a fairly restricted habitat, but is not excessively rare where it occurs. The habitat is, one is tempted to write "of course," the eastern edge of the Rainy Forest from the Ituri Forest down to the ·Sankuru river.
Even if there were no rumors left

it would be an obvious question to ask whether the Rainy Forest might not harbor more unknown creatures. The rumors say that it does, and a good number of them look fairly substantial. Hans Schomburgk gathered quite a number of them when he was looking for Choeropsis and told me about them one night in Berlin, about a dozen years ago.

While asking questions about "large pigs," with the purpose of locating the haunts of the pygmy hippo, he fell in again and again with reports of a small mountain rhinoceros.

Now Schomburgk knew about Meinertzhagen's forest hog and that it had been termed "a small rhinoceros.

He also knew that a native, trying to be polite, will unhesitatingly affirm that there is, in Sc burgk's words, "a large animal seven horns but only one eye blue fur" if the interrogator show inclinations to be told about an animal.

So Schomburgk said, oh yes, and proceeded to describe the forme hog. To his great surprise the tive hunters contradicted vi ously and told him in what respec the "mountain rhinoceros" differed from the black pig.

It was evident that the nati hunters knew what they were tak ing about. Schomburgk came to the conclusion that the mountains of eastern Liberia actually harbor small-size form of the rhinocerce But so far the small "mountai rhino" has not been discovered.

Other rumors of the Rainy Forest deal with a cat the size of a leopard but of different habits; as animal called "too" which is described as goat-sized and black; and the so-called nandi bear, a bear like animal which is said to be a forest dweller and a night prowler.

Various settlers have reported that this animal was occasionally killed by poisoned meat put out for hyenas, even photographs are said to have been taken, but so far the "nandi bear" has never been tracked down by a naturalist.

But the prize story of all the stor ies of unknown animals of equatorial Africa is that of the "dragon of the Congo Forest," the animal "mo- kele-mbembe" of the natives. Though it seems much more fan- tastic at first glance than any of the Hunting Africa's ether reports, it is actually one of the best documented. These other discovered animals are, after all, strange only because they are not et known to science.

But the animal "mokele- mbembe" is described as a living dinosaur!

It is probably not a dinosaur in the zoological sense, but it is, in all probability, a large reptile. Schom- burgk carried one of the tales about such an animal.

When he came to Lake Bang- weolo, outside the limits of the Rainy Forest proper, he was sur- prised that hippopotami were lack- ing, although the lake was just such a body of water which would harbor hippopotami.

The natives had an explanation. The lake did not have hippopotami because it was inhabited by an ani- mal which, although somewhat smaller in size, killed them.

There was also an old, old pic- ture which could be taken to con- tribute evidence. That picture came from the Ishtar Gate of Babylon, archaeo- logical findings, by King Nebuchad- nezzar, erected, according to

To express the splendor of the great king, colored bas-reliefs of animals were imbedded into the

walls, a long row. of majestically walking lions along the procession way, and alternating rows of "rimi and sirrushu
on the gate itself.
The "rimi" are wild oxen. The "sirrushu" are the "dragons" of Babylon.
The question now arises whether

the sirrush is a mythical monster or whether the Babylonians pictured an animal with which they were familiar and we are not. Offhand it would seem strange that they should place a mythical monster between two existing animals -the lions and "rimi."
I think that, purely from the point of view of logic, the chances are even that the sirrush is the picture of an actually existing animal too. This assumption does not imply that this animal was frequent or even that it occurred near Babylon. On the contrary, it may have been given its place of honor just because it was a "strange beast from far lands.'
In build the sirrush is strongly reminiscent of certain extinct dinosaurs, with a long neck, with forefeet resembling the paws of a mammal and hind feet looking like those of a bird.
It has a forked tongue like snakes and monitor lizards and apparently some flaps of skinny membrane at the head, very much like certain chameleons and other types of living reptiles.
It is described as having a long and muscular tail like an alligator. In size it is said to be intermediate between hippopotamus and elephant.
And there can be little doubt that Central Africa still harbors a large long-necked animal of some kind which shows a definite preference for an aquatic environment and

which is, in all probability, a large
reptile.

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suggest themselves are not allowed much importance. This is not an original essay or a thoughtful use of the facts, but a random borrowing. The reader is never quite sure as to the author's intentions, and while that may be part of the fun, the book seems to follow a hit-or-miss approach to some challenging material.

ADVENTUROUS ALLIANCE, The Story of the Agassiz Family of Boston, by Louise Hall Tharp. Little, Brown, $5.00; 354 PP., illus.

OUISE HALL THARP has set out to write LOUISE HALL THARP has set out to write from beginning to end, but if the period is re-created and brought close to contemporary readers, Agassiz himself remains intangible. Not that information is lacking about his life and fortunes: much is said about his personal force and his intellectual influence on American society. But the background is clearer than the man who stands in front of it.

THE CARE AND CULTIVATION OF INDOOR PLANTS, by Violet Stevenson. Philosophical Library, $4.75; 159 pp., illus.

A'

USEFUL, sturdily written little book designed to help the home owner see his favorite potted plants through the year. It gives thorough details as to proper treatment and placement, as well as advice on soil conditions and care of the sick. The photographs, regrettably, are uninspired.

SOUTHWEST GARDENING, by Rosalie Doolittle, in collaboration with Harriet Tiedebohl. University of New Mexico Press, $5.00; 222 pp., illus.

HIS book won a prize from the Na-Ttional Council of Garden Clubs, and in fact it is well printed and presented. However, the author introduces her subject with an irritating "flowers-as-pets" angle, goes on to assume a frequently fussy authority about the do's and don'ts of the business, and rather neglects the soil and weather conditions of the Southwest, although this is specifically a regional book. But all in all, what can be done with landscaping and

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THE STORY OF EARTH SCIENCE, by Horace G. Richards. Lippincott, $3.75; 169 illus.
pp.,

I
HE author is a geologist whose e
earth science not so much for the very young as for the "slightly advanced." I is a beginner's book, then, but one which might be read with profit by an untutored adult. Useful guides are provided for the identification of common rocks, fossils, and minerals, and their general charac teristics are clearly and simply described.

HIDDEN AMERICA, by Roland Wells Rob bins and Evan Jones. Knopf, $5.00; 259 PP., illus.

MATEUR archeology on a high level
A Roland Wells Robbins, who has written this book in collaboration with Evan Jones, was the discoverer of the site of Thoreau's cabin on the shores of Walden Pond. He also directed the ex cavation of the colonial ironworks at Saugus, Massachusetts, and has sunk his probing rods into the soil over many other historic and prehistoric sites in this country. His book is honest and unpretentious, makes no unsubstantiated claims, and, as with the supposed traces of the Viking occupancy of Cape Cod, retains an intelligent skepticism. The photographs are well chosen.

SCIENCE IN PROGRESS, Eleventh Series, edited by Hugh Taylor. Yale University Press, $7.50; 379 pp.

HE latest in a very excellent series, THE latest in a very excellent seribe Sigma Xi lectures for 1957 and 1958. Of particular note in the present book are chapters on mountain building, by Armand J. Eardley; continental growth, by J. Tuzo Wilson; cosmic radiation, by Serge A. Korff; smoking and death rates, by E. Cuyler Hammond; and viruses and cancer, by J. W. Beard.

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superfluous to suggest that aw more color plates would not have been amiss; but for the layman color is dinarily of great value in identification. Bever, this criticism is not intended detract from a book which provides cellent historical and descriptive infor- sation, as well as a great quantity of

inta about the location of
gems.

10 INDOOR PLANTS, by A.C. Muller-Merda. Emerson Books, $2.95; 114 pp.

HE 100 plants included in this little Tguide are a good, representative pap, and the photographs that accom-pay their description and advice as to ir care are well chosen. The book simply but accurately written, and bald be very useful for the tyro who sats plants in the house or apart-at but needs a professional to help plan.

FATHERS AND FLIGHT, by Clarence J. Brander. Macmillan, $3.95; 214 pp., Has.

TERE is a book for young readers that does not succumb to the temptation H³ á talking down or over-simplifying. Ex-lent ornithological material is pro. ded in a well-written, substantial text. Discussions of the physical characteris-of birds in general and, more par-ularly, of the relationship of many Larican species to their environment ite further exploration by the watcher a the field or by the student of biology.

THE SALT WATER AQUARIUM IN THE BONE, by Robert P. L. Straughan. A. S. Barnes, $7.50; 252 pp., illus.

HOSE who have long hesitated to start Tags who have long hesitated to start emingly insurmountable odds will be what reassured by this book. It can be done-but not without painstaking at-tation, and Mr. Straughan, an expe-aced aquarist and marine collector, brings the successful marine aquarium deser to possibility than it used to be. The book is a little expensive, but pro-ely illustrated.

TILLY LEY'S EXOTIC ZOOLOGY, by Willy Ley. Viking, $4.95; 468 pp., illus.

THE word "exotic" is a teaser, bring-ing to mind the serpents and dragons ith which Mr. Ley's book abounds. Ley more of an antiquarian than a scien-although he offers facts as well as ths; he dredges in the muddy waters flore with a will, while presenting

odern findings at the same time. Moas,
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968 Rhodesia. Southern-Politics and government
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Appendixes on Northern Rhodesia and Nyasaland make European minority dominance even more
The writer happily makes few predictions and fewer recommendations. To this reviewer some of the latter appear contradictory
obvious.
C. R. Lovell
Am Hist R 65:166 O '59 350w
"Whatever happens in Rhodesia, Mr. Leys" book will remain essential reading. No one else has dealt so comprehensively with the Rhodesian scene, or exhibited so much insight into its basic characteristics. While the first part of the work sometimes appears overloaded with facts and statistics, often presented in the form of graphs, they underpin the absorbing sections on politics which follow. Though one may disagree with some of Mr. Leys' personal judgments on Rhodesian attitudes and future trends. his penetrating analysis of a highly complicated situation is significant not only for those interested in Africa but also for all students of the political process.' G. M. Carter
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+Times [London] Lit Sup D449 J1 31 '59 800w

LHOTE, HENRI. Search for the Tassili frescoes; the story of the prehistoric rock-paintings of the Sahara; tr. from the French

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571 Tassili-n-Ajjer-Antiquities. Art, Primitive

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LEY, WILLY. The lungfish, the dodo, and the unicorn; an excursion into romantic zoology. new ed rev & enl 361p il $3.75 Viking
591.5 Animal lore. Zoology
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Newsweek magaze
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Fuels for the Stratosphere -And Beyond!

by WILLY LEY
Famous Rocket Expert

uring my lecture tours, I visit a great many oil D company laboratories. Each time I find oil scientists vitally interested in the fuels of tomorrow. In fact, our discussion automatically seems to turn to fuels for all kinds of rockets-for rocket-propelled aircraft and finally-for space-going craft!

Rocket fuel research is highly complex-and very expensive. You see, there is no "best" fuel for rockets. Each rocket has special needs. For example, if your rocket is a military missile, it may have to, stand ready, fully fueled, for quite some time. That calls for a fuel which can "stand and wait."

But if you have a towering research rocket which carries instruments beyond the stratosphere and pokes its nose into empty space to see how empty it actually is, you need a special fuel combination which can be put into the tanks just before firing.

Furthermore, we want rocket fuels to contain more than just a lot of energy. Like the motorist who wants a fuel without knock - the rocket engineer has lots of special wishes: his fuel must not freeze on cold days in the Arctic-nor can it develop high vapor pressure on a hot day in the tropics.

It must not be too light because lots of fuel weight in the tank is essential. It must be in plentiful supply because a large rocket burns about 300 pounds per second. For the same reason it must not cost too much. And it must be a good heat conductor

because fuel is used to cool the rocket motor from outside before it is injected to burn inside. And to make the rocket engineer really happy, the fuel should not need any ignition but burst into flame spontaneously when meeting the liquid supplying the vital oxygen.

You can see that developing "perfect" rocket fuels is a tough assignment. But from what I've seen of oil scientists, they're sure to meet this challenge.

Willy Ley is one of the first pioneers in rocket research: As early as 1927 he became one of the founders of the German Rocket Society. Now a popular author and lecturer on "rocketry," Willy Ley is also a consultant to the Office of Technical Services of the Department of Commerce and a member of rocket societies all over the world.

Top automotive engineers will tell you that the moment they come up with an advanced engine design, oilmen always are ready with the proper fuel to power this engine efficiently and economically. And in rocket research, oil scientists have already contributed various jet fuels, ethyl alcohol for research rockets and the hydrazine needed for "ignitionless" rockets.

There is a good reason why American oilmen are always ready for tomorrow. It is the intensely competitive nature of the oil industry. No company can stand still even for a second. Each company exerts every effort to stay ahead of rivals by developing new and improved products at the lowest possible price. The result is progress-lots of it.

To me this is a perfect example of the way all of us -whether we are rocket engineers or just car owners-benefit from the American competitive business system.

This is one of a series of reports by outstanding Americans who were invited to examine the job being done by the U. S. oll Industry.

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